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U. S. DEPARTMENT OF AGRICULTURE

LIST OF PUBLICATIONS

OF THE

U. S. DEPARTMENT OF AGRICULTURE

FOR THE

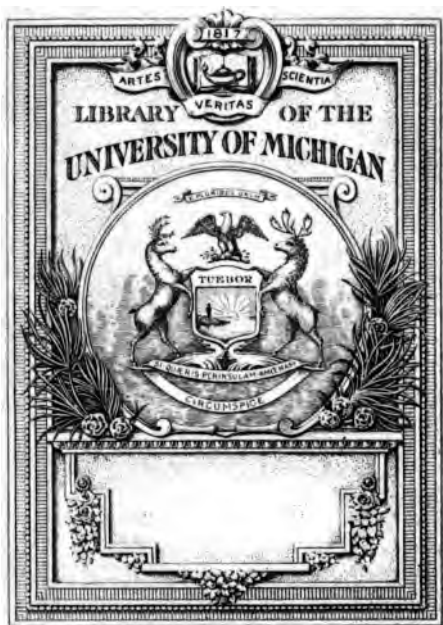
FIVE YEARS 1889-1893, INCLUSIVE.

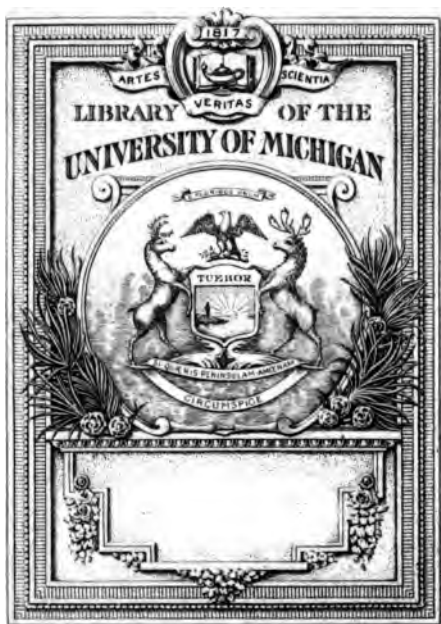
PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1894.





U. S. DEPARTMENT OF AGRICULTURE.

LIST OF PUBLICATIONS

OF THE

485

U. S. DEPARTMENT OF AGRICULTURE

FOR THE

FIVE YEARS 1889-1893, INCLUSIVE.

485

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

WASHINGTON:
GOVERNMENT PRINTING OFFICE,
1894.



LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
DIVISION OF RECORDS AND EDITING,
Washington, D. C., March 23, 1894.

SIR: I have the honor to transmit herewith for publication a list of the publications of this Department for the last five calendar years. The list is a combination of those for 1890, 1891, and 1892, which have appeared in the annual reports of the chief of this division for those years, and of lists for 1889 and 1893, which have not heretofore been printed.

It is hoped that in course of time a similar list may be prepared of all the publications issued by the Department from 1862, the year of its establishment, to date. At present the data for such a list are not fully available, and further research will be needed to make a list which may be regarded as complete.

I have prefixed to the present list a brief introductory, giving some information of interest regarding the publication work of the Department.

Very respectfully,

GEO. WM. HILL,
Chief of the Division of Records and Editing.
Hon. J. STERLING MORTON,
Secretary.

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PUBLICATIONS OF THE U. S. DEPARTMENT OF AGRICULTURE, 1889-1893, INCLUSIVE.

INTRODUCTORY.

Publications of the Department of Agriculture may be prepared and printed by special direction of the Congress, or may originate in the Department as the information at hand may justify or the public necessity may seem to demand. If ordered by Congress, their cost is borne by that body; if not, they are paid for from the printing fund annually appropriated to the Public Printer for the use of the Department, or from funds set aside by law for the particular division whence the publication comes, the act of appropriation sometimes containing a clause allowing part of the money to be used for printing.

Of publications produced in pursuance of act of Congress, may be instanced the Annual Report of the Department, the annual reports of the Bureau of Animal Industry and of the Weather Bureau, the reports of the U. S. Entomological Commission, and reports upon special lines of investigation, such as irrigation, rainfall production, etc. Sometimes Congress has printed for its own distribution large editions of publications which were not originally ordered by that body, as in the cases of the books known as "Diseases of the Horse," "Diseases of Cattle," and "Sheep Industry of the United States."

For many years the Annual Report of the Department contained, besides the records of work in the Department, which was for a long time comparatively meager, articles by specialists on various subjects connected with agriculture. In course of time this mass of miscellaneous matter made the volumes unwieldy in bulk, and it has been eliminated from the Reports of recent years. It now consists of the annual report of the Secretary of Agriculture to the President and the annual reports of the Assistant Secretary and the chiefs of the various bureaus and divisions to the Secretary. The size of the edition—500,000 copies for 1892—demands that the Report be popular. Therefore executive matters are largely omitted from it. Each Report is intended to present a full account of the valuable work of the Department for the year covered by it. The effort to restrict this Report within reasonable limits has been

on the whole successful. The Annual Report, which in 1888 included reports of twelve divisions and two miscellaneous reports, covered 708 pages; in 1889 there were reports of fifteen divisions, in 560 pages; in 1890, twenty divisions, in 612 pages; in 1891, twenty divisions, in 653 pages, over 100 pages of which were occupied by the Weather Bureau, that being the first year of its connection with the Department of Agriculture; in 1892, twenty-one reports, in 656 pages.

Of the publications arising in the Department the only general class of bulletins to which any one or more of the divisions contribute numbers or parts of numbers is that known as "Farmers' Bulletins," which are numbered in one consecutive series. As the name shows, these bulletins are intended to be entirely popular and brief treatises on agricultural topics of general and immediate interest to the people. The subjects are treated in a plain, practical way, and the number of an edition varies from 5,000 to over 100,000, being largely dependent upon the relative importance of the matter discussed and the extent of the section to which the several bulletins are specially applicable.

Each division offers for publication from time to time bulletins on subjects which have been its special study, and some divisions issue circulars of information regarding their work or circulars of inquiry intended to facilitate their labors. The usual edition of a bulletin is from 5,000 to 10,000 copies, frequently less than the former figure but rarely more than the latter, governed largely by the class of readers it is intended to reach.

Of the periodical publications, the Division of Statistics issues in editions of 18,000 monthly crop reports, numbered and paged consecutively, and sends out in advance of each, in editions of about 127,000, a four-page synopsis of its principal features. The other periodical publications are: "Contributions from the U. S. National Herbarium," average edition 2,500, Division of Botany; "Insect Life," average edition 5,500, Division of Entomology; "Experiment Station Record," average edition 8,000, Office of Experiment Stations; "Journal of Mycology," average edition 2,500, Division of Vegetable Pathology; and the semi-daily weather map, the daily weather bulletin, the weather crop bulletin, and the "Monthly Weather Review," in the Weather Bureau. "North American Fauna," prepared in the Division of Ornithology and Mammalogy, has been published in several parts, but as each issue has had separate title and paging it can not properly be classed as a periodical.

Some idea of the extent of the publications of the Department may be obtained from the following table, which also shows the amount of the printing fund appropriated for the use of the Department for the five years 1889-1893. The list is exclusive of circulars of inquiry, Congressional publications, and those of the Weather Bureau.

Years.	Number of publications.	Number of printed pages.	Number of copies issued.	Amount of printing fund.
1889.....	78	4, 291	526, 537	\$40, 914. 37
1890.....	89	5, 006	1, 363, 300	39, 235. 45
1891.....	109	6, 715	1, 883, 400	50, 000. 00
1892.....	131	10, 109	2, 116, 300	65, 000. 00
1893.....	118	7, 939	2, 149, 350	75, 000. 00
Total	525	34, 060	8, 038, 887	270, 149. 82

As the list of publications is for calendar years and the appropriations are for fiscal years, some publications covered by the first and last appropriations mentioned do not appear. A comparison of the years 1889 and 1892 makes the singularly gratifying showing that, with an increase in printing fund of 58 per cent, the number of publications has increased more than 67 per cent, the number of pages more than 135 per cent, while the number of copies issued has advanced over 300 per cent. That is, for less than twice as much money, there have been issued more than twice the number of publications, nearly three times the number of pages, and over four times the number of copies, thus making it possible to reach a very much larger number of people. These figures show the result of a settled policy adopted and maintained during the past few years, looking to a more systematic classification of the publications of the Department so as to meet the wants of different classes of readers, and to a wider extension of publications of a popular character.

The distribution of the publications is free, copies being franked to applicants as long as there are any on hand not needed for the files of the Department. In only two instances has Congress provided for the sale of these documents. Long before the Weather Bureau became one of the divisions of the Department the law provided that the Chief Signal Officer might sell surplus copies of maps or publications.* Under this law the Weather Bureau still disposes of its publications by sale. In the act of Congress making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1894, there is a clause allowing the Secretary of Agriculture to sell copies of the card index to agricultural literature,† prepared by the Office of Experiment Stations.

* "The Chief Signal Officer may cause to be sold any surplus maps or publications of the Signal Office, the money received therefor to be applied toward defraying the expenses of the Signal Service; and an account of the same shall be rendered in each annual report of the Chief of the Signal Service." [U. S. Revised Statutes, second ed. 1878, p. 37, sec. 227.]

† " * * * and the Secretary of Agriculture is hereby authorized to furnish to such institutions or individuals as may care to buy it copies of the card index of agricultural literature prepared by the Office of Experiment Stations, and charge for the same a price covering the additional expense involved in the preparation of these copies, and he is hereby authorized to apply the moneys received toward the expense of the preparation of the index." [U. S. Statutes at Large, vol. 27, p. 741.]

In the list which follows, the arrangement of publications by divisions and the practice of repeating in each instance the ordinary characterization of a bulletin, as, for instance, "Ornithological Bulletin No. 4," "Chemical Bulletin No. 20," etc., both of which points were features of former lists, have been retained as interposing fewest obstacles to ready reference, and to the unmistakable identification of a document. Unless otherwise stated, the size of each publication is octavo.

**LIST OF PUBLICATIONS OF THE U. S. DEPARTMENT OF AGRICULTURE FOR THE FIVE
YEARS 1889-1893, INCLUSIVE.**

OFFICE OF THE SECRETARY.

- Report of the Commissioner of Agriculture for 1888. (Norman J. Colman, Commissioner.) Pp. 708, illustrated. June, 1889.
- Report of the Secretary of Agriculture for 1889. (J. M. Rusk, Secretary.) Pp. 560, illustrated. June, 1890.
- Report of the Secretary of Agriculture for 1890. (J. M. Rusk, Secretary.) Pp. 612, illustrated. April, 1891.
- Report of the Secretary of Agriculture for 1891. (J. M. Rusk, Secretary.) Pp. 653, illustrated. May, 1892.
- Report of the Secretary of Agriculture for 1892. (J. M. Rusk, Secretary.) Pp. 656, illustrated. August, 1893.
- Report of the Secretary of Agriculture for 1889. By J. M. Rusk. (Preliminary report to the President.) Pp. 40. November, 1889.
- Report of the Secretary of Agriculture for 1890. By J. M. Rusk. (Preliminary report to the President.) Pp. 52. November, 1890.
- Report of the Secretary of Agriculture for 1891. By J. M. Rusk. (Preliminary report to the President.) Pp. 59. November, 1891.
- Report of the Secretary of Agriculture for 1892. By J. M. Rusk. (Preliminary report to the President.) Pp. 64. November, 1892.
- Report of the Secretary of Agriculture for 1893. By J. Sterling Morton. (Preliminary report to the President.) Pp. 48. November, 1893.
- Special Report of the Assistant Secretary—The Scientific Work of the Department in its Relations to Practical Agriculture. By Edwin Willits. (From the Report of the Secretary of Agriculture for 1890.) Pp. 59-76. April, 1891.
- Special Report of the Assistant Secretary—Coöperation of the Department of Agriculture with the Educational Forces in the United States relating to Agriculture. By Edwin Willits. (From the Report of the Secretary of Agriculture for 1891.) Pp. 65-81. June, 1892.
- Special Report of the Assistant Secretary of Agriculture for 1892—Duties of the Assistant Secretary; Review of the Work, 1889-1892. By Edwin Willits. (From the Report of the Secretary of Agriculture for 1892.) Pp. 67-84. June, 1893.
- Farmers' Bulletin No. 6. Tobacco: Instructions for its Cultivation and Curing. By John M. Estes. Pp. 8. February, 1892.
- Farmers' Bulletin No. 7. Spraying Fruits for Insect Pests and Fungous Diseases, with a Special Consideration of the Subject in its Relation to the Public Health. Pp. 20. April, 1892.

Report on the Use of Maize (Indian Corn) in Europe, and on the Possibilities of its Extension. (Contents: The Introduction of Maize into Europe, by Charles J. Murphy; The Food Value of Maize, by H. W. Wiley; The Indian Corn Industry in the United States, by B. W. Snow.) Pp. 36. December, 1891.

German edition. Pp. 23. May, 1892.

French edition. Pp. 22. June, 1892.

Spanish edition. Pp. 24. October, 1892.

Scandinavian edition. Pp. 22. February, 1893.

Letter from the Secretary of Agriculture, transmitting the Report of the Bureau of Animal Industry for the year 1890. (Senate Executive Document No. 8, Fifty-first Congress, second session.) Pp. 104. December, 1890.

Letter from the Secretary of Agriculture, transmitting the Report of the Bureau of Animal Industry for the year 1891. (Senate Executive Document No. 11, Fifty-second Congress, first session.) Pp. 129. January, 1892.

Letter from the Secretary of Agriculture, transmitting the Report of the Bureau of Animal Industry for the year 1892. (Senate Executive Document No. 20, Fifty-second Congress, second session.) Pp. 229. January, 1893.

Progress Report on the Dairy Industry of Denmark. By Prof. C. C. Georgeson. Pp. 14. March, 1893.

Selected Correspondence relating to the Export Trade of the United States in Live Stock and Meat Products. Pp. 33. March, 1893.

Studies of Parasitic and Predaceous Insects in New Zealand, Australia, and adjacent Islands. Made by A. Koebele, at the request of the California State Board of Horticulture. Pp. 39. June, 1893.

Special Report on Tea-Raising in South Carolina. By Charles U. Shepard. (From the Report of the Secretary of Agriculture for 1892.) Pp. 627-640, pls. 3. July, 1893.

Indian Corn (or Maize) in the Manufacture of Beer. By Dr. Robert Wahl. Pp. 21. September, 1893.

German edition. Pp. 22. September, 1893.

Letter from the Secretary of Agriculture, transmitting reports upon the operations of the Women's Silk Culture Association of the United States, and of the Ladies' Silk Culture Society of California, and upon experiments made in the District of Columbia with silk-reeling machinery. (House Executive Document No. 110, Fifty-first Congress, first session.) Pp. 30. January, 1890.

Communication from the Acting Secretary of Agriculture, in reference to a deficiency in the appropriation for the North Dakota agricultural experiment station, and stating that said appropriation should be made. (House Executive Document No. 423, Fifty-first Congress, first session.) Pp. 1. June, 1890.

Letter from the Secretary of Agriculture, transmitting a statement of expenditures for the Department of Agriculture for the fiscal year ended June 30, 1889. (House Executive Document No. 104, Fifty-first Congress, first session.) Pp. 98. January, 1890.

Letter from the Secretary of Agriculture, transmitting a statement of the expenditures of all appropriations in the Department of Agriculture for the fiscal year ended June 30, 1890. (House Executive Document No. 35, Fifty-first Congress, second session.) Pp. 95. December, 1890.

Letter from the Secretary of Agriculture, transmitting a detailed statement of all expenditures of appropriations for the Department of Agriculture for the year ending June 30, 1891. (House Executive Document No. 55, Fifty-second Congress, first session.) Pp. 134. January, 1892.

Letter from the Secretary of Agriculture, transmitting a statement of all purchases of cocoons and all sales of silk and silk waste during the fiscal year ending June 30, 1890. Also the reports of the Ladies' Silk Culture Society of California, and the Women's Silk Culture Association of the United States. (House Executive Document No. 203, Fifty-first Congress, second session.) Pp. 25. January, 1891.

Letter from the Secretary of Agriculture, transmitting a statement showing the expenditure of the appropriation for experiments in the manufacture of sugar. (House Executive Document No. 251, Fifty-second Congress, second session.) Pp. 3. March, 1893.

Letter from the Secretary of Agriculture, in response to Senate resolution of March 24, 1892, relative to certain employes in his Department. (Senate Executive Document No. 75, Fifty-second Congress, first session.) Pp. 5. April, 1892.

BUREAU OF ANIMAL INDUSTRY.

Fourth and Fifth Annual Reports of the Bureau of Animal Industry, for the Years 1887 and 1888. Pp. 510, pls. 25. March, 1890.

Sixth and Seventh Annual Reports of the Bureau of Animal Industry, for the Years 1889 and 1890. Pp. 503, diagrams 3, map 1. February, 1892.

Eighth and Ninth Annual Reports of the Bureau of Animal Industry, for the Years 1891 and 1892. Pp. 428, pls. 11, figs. 7. October, 1893.

Hog Cholera: Its History, Nature, and Treatment, as determined by the Inquiries and Investigations of the Bureau of Animal Industry. Pp. 197, pls. 16. April, 1889.

Report of the United States Board of Inquiry Concerning Epizootic Diseases Among Swine. Pp. 15. August, 1889.

The Animal Parasites of Sheep. By Cooper Curtice. Pp. 222, pls. 32. July, 1890.

Report on the Beef Supply of the United States, and the Export Trade in Animals and Meat Products. By D. E. Salmon. (From Report of the Secretary of Agriculture for 1889.) Pp. 15. March, 1890.

Report on Inoculation as a Preventive of Swine Diseases. By D. E. Salmon. (From Report of the Secretary of Agriculture for 1889.) Pp. 10. March, 1890.

Proceedings of an Interstate Convention of Cattlemen, held at Fort Worth, Texas, March 11, 12, and 13, 1890. Pp. 102. May, 1890.

Special Report on Diseases of the Horse. (By Ch. B. Michener, James Law, W. H. Harbaugh, M. R. Trumbower, A. Liautard, A. A. Holcombe, R. S. Huidekoper, and William Dickson.) Pp. 560, pls. 44. February, 1891.

Special Report on Diseases of Cattle and on Cattle Feeding. (By A. J. Murray, V. T. Atkinson, W. H. Harbaugh, W. H. Lowe, James Law, William Dickson, M. R. Trumbower, Theobald Smith, and W. A. Henry.) Pp. 496, pls. 44. December, 1892.

Special Report on the History and Present Condition of the Sheep Industry of the United States. By Ezra A. Carman, H. A. Heath, and John Minto. Pp. 1000, pls. 96. December, 1892.

Special Report on the Cause and Prevention of Swine Plague. By Theobald Smith. Pp. 166, pls. 12. September, 1891.

Farmers' Bulletin No. 8. Results of Experiments with Inoculation for the Prevention of Hog Cholera. By D. E. Salmon. Pp. 40. May, 1892.

Bulletin No. 1, Bureau of Animal Industry. Investigations into the Nature, Causation, and Prevention of Texas or Southern Cattle Fever. By Theobald Smith and F. L. Kilborne. Pp. 301, pls. 10, figs. 7. March, 1893.

Bulletin No. 2, Bureau of Animal Industry. Report upon Investigations relating to the Treatment of Lumpy-Jaw, or Actinomycosis in Cattle. By D. E. Salmon. Pp. 90, pls. 8. February, 1893.

Bulletin No. 3, Bureau of Animal Industry. Special Report on Miscellaneous Investigations Concerning Infectious and Parasitic Diseases of Domesticated Animals. Pp. 88, pls. 3. November, 1893.

Maps Showing the Boundary Line of the District Infected with Splenetic or Southern Fever of Cattle. (Size, uniformly 17 by 36 inches.)

1891. March 8.

1892. March 28.

1893. March 6.

Report of the Chief of the Bureau of Animal Industry for 1889. By D. E. Salmon. (From the Report of the Secretary of Agriculture for 1889.) Pp. 49-110. August, 1890.

Report of the Chief of the Bureau of Animal Industry for 1890. By D. E. Salmon. (From the Report of the Secretary of Agriculture for 1890.) Pp. 75-132. May, 1891.

Report of the Chief of the Bureau of Animal Industry for 1891. By D. E. Salmon. (From the Report of the Secretary of Agriculture for 1891.) Pp. 83-142. June, 1892.

Report of the Chief of the Bureau of Animal Industry for 1892. By D. E. Salmon. (From the Report of the Secretary of Agriculture for 1892.) Pp. 85-122. June, 1893.

DIVISION OF BOTANY.

Botanical Bulletin No. 8. A Record of Some of the Work of the Division, including Extracts from Correspondence and other Communications. By George Vasey and B. T. Galloway. Pp. 67. February, 1889.

Botanical Bulletin No. 9. Peach Yellows: A Preliminary Report. By Erwin F. Smith. Pp. 254, pls. 37, maps 8. March, 1889.

Botanical Bulletin No. 10. Report on the Experiments made in 1888 in the Treatment of the Downy Mildew and Black Rot of the Grape Vine. Pp. 61, pls. 2. May, 1889.

Botanical Bulletin No. 11. (Section of Vegetable Pathology.) Report on the Experiments made in 1889 in the Treatment of the Fungous Diseases of Plants. By B. T. Galloway. Pp. 119, pls. 8. May, 1890.

Botanical Bulletin No. 12. Grasses of the Southwest. Plates and Descriptions (50) of the Grasses of the Desert Region of Western Texas, New Mexico, Arizona, and Southern California. Part I. By George Vasey. Size, 7½ by 11½ inches. October, 1890.

Botanical Bulletin No. 12. Grasses of the Southwest. Plates and Descriptions (50) of the Grasses of the Desert Region of Western Texas, New Mexico, Arizona, and Southern California. Part II. By George Vasey. Size, 7½ by 11½ inches. December, 1891.

Botanical Bulletin No. 13. Grasses of the Pacific Slope, including Alaska and the Adjacent Islands. Plates and Descriptions (50) of the Grasses of California, Oregon, Washington, and the Northwestern Coast, including Alaska. Part I. By George Vasey. Size, 7½ by 11½ inches. October, 1892.

Botanical Bulletin No. 13. Grasses of the Pacific Slope, including Alaska and the Adjacent Islands. Plates and Descriptions (50) of the Grasses of California, Oregon, Washington, and the Northwestern Coast, including Alaska. Part II. By George Vasey. Size, 7½ by 11½ inches. May, 1893.

Botanical Bulletin No. 14. *Ilex Cassine*, the Aboriginal North American Tea: Its History, Distribution, and Use among the North American Indians. By E. M. Hale. Pp. 22, pl. 1, fig. 1. November, 1891.

The Agricultural Grasses and Forage Plants of the United States and such Foreign Kinds as have been Introduced. By George Vasey. With an appendix on the chemical composition of grasses, and a glossary of terms used in describing grasses. New, revised, and enlarged edition, with 114 plates. Pp. 148. January, 1890.

Contributions from the U. S. National Herbarium, [Vol. I,] No. 1. (Contents: List of Plants Collected by Dr. Edward Palmer in 1888 in Southern California; List of Plants Collected by Dr. Edward Palmer in 1889 at Lagoon Head, Cedros Island, San Benito Island, Guadalupe Island, and Head of the Gulf of California.) By George Vasey and J. N. Rose. Pp. vii, 28. June, 1890.

Contributions from the U. S. National Herbarium, [Vol. I,] No. 2. (Contents: Upon a Collection of Plants made by Mr. G. C. Nealley, in the Region of the Rio Grande, in Texas, from Brazos Santiago to El Paso County.) By John M. Coulter. Pp. iii, 29-65. July, 1890.

Contributions from the U. S. National Herbarium, [Vol. I,] No. 3. (Contents: List of Plants Collected by Dr. Edward Palmer in 1890 in Lower California and Western Mexico, at La Paz, San Pedro Martin Island, Raza Island, Santa Rosalia and Santa Agueda, and Guaymas.) By George Vasey and J. N. Rose. Pp. vi, 63-90, pl. 1. November, 1890.

Contributions from the U. S. National Herbarium, Vol. I, No. 4. (Contents: List of Plants Collected by Dr. Edward Palmer in 1890 in Western Mexico and Arizona.) By J. N. Rose. Pp. vii, 91-127, pls. 2-11. July, 1891.

Contributions from the U. S. National Herbarium, Vol. I, No. 5. (Contents: List of Plants Collected by Dr. Edward Palmer in 1890 on Carmen Island, by J. N. Rose; List of Plants Collected by the U. S. S. *Albatross* in 1887-'91 along the Western Coast of America, by J. N. Rose, D. C. Eaton, J. W. Eckfeldt, and A. W. Evans; Revision of the North American Species of *Hoffmanseggia*, by E. M. Fisher; Systematic and Alphabetic Index of New Species of North American Phanerogams and Pteridophytes, published in 1891, by Josephine A. Clark.) Pp. x, 129-188, pls. 12-16. September, 1892.

Contributions from the U. S. National Herbarium, Vol. I, No. 6. (Contents: List of Plants Collected by C. S. Sheldon and M. A. Carleton in the Indian Territory in 1891, by J. M. Holzinger; Observations on the Native Plants of Oklahoma Territory and Adjacent Districts, by M. A. Carleton.) Pp. ix, 189-232, pls. 17, 18. December, 1892.

Contributions from the U. S. National Herbarium, Vol. I, No. 7. Systematic and Alphabetic Index to New Species of North American Phanerogams and Pteridophytes, published in 1892, by Josephine A. Clark. Pp. iii, 233-263, iii. July, 1893.

Contributions from the U. S. National Herbarium, Vol. I, No. 8. (Contents: Notes on some Pacific Coast Grasses, by George Vasey; Descriptions of New or Noteworthy Grasses from the United States, by George Vasey; Descriptions of New Grasses from Mexico, by George Vasey; Description of New Plants from Texas and Colorado, by J. M. Holzinger; List of Plants new to Florida, by J. M. Holzinger; Descriptions of three New Plants, by J. N. Rose; Lists of Lichens from California and Mexico, collected by Dr. Edward Palmer from 1888 to 1892, by J. W. Eckfeldt.) Pp. iii, 265-292, ii, pls. 19-23. October, 1893.

Contributions from the U. S. National Herbarium, Vol. II, No. 1. Manual of the Phanerogams and Pteridophytes of Western Texas. Polypetalæ. By John M. Coulter. Pp. v, 152, iv, pl. 1. June, 1891.

- Contributions from the U. S. National Herbarium, Vol. II, No. 2. *Manual of the Phanerogams and Pteridophytes of Western Texas. Gamopetalæ.* By John M. Coulter. Pp. x, 153-345, pls. 2, 3. June, 1892.
- Contributions from the U. S. National Herbarium, Vol. III, No. 1. *Monograph of the Grasses of the United States and British America.* By George Vasey. Pp. xiv, 89. February, 1892.
- Contributions from the U. S. National Herbarium, Vol. IV. *Botany of the Death Valley Expedition. A Report on the Botany of the Expedition sent out in 1891 by the U. S. Department of Agriculture to make a Biological Survey of the Region of Death Valley, California.* By Frederick Vernon Coville. Pp. viii, 363, with frontispiece, 21 pls., and 1 map. November, 1893.
- Farmers' Bulletin No. 10. *The Russian Thistle and other Troublesome Weeds in the Wheat Region of Minnesota and North and South Dakota.* By L. H. Dewey. Pp. 16. March, 1893.
- Report of Grass and Forage Experiment Stations in the South and West—Grass and Forage Experiment Station at Garden City, Kans., by Dr. J. A. Sewall, and Coöperative Branch Stations in the South, by S. M. Tracy. (Reprinted from the Report of the Botanist in the Report of the Secretary of Agriculture for 1891.) Pp. 12. May, 1892.
- Report of the Botanist for 1888. By George Vasey. (From the Report of the Commissioner of Agriculture for 1888.) Pp. 305-324, pls. 13. August, 1889.
- Report of the Botanist for 1889. By George Vasey. (From the Report of the Secretary of Agriculture for 1889.) Pp. 377-396, pls. 11. August, 1890.
- Report of the Botanist for 1890. By George Vasey. (From the Report of the Secretary of Agriculture for 1890.) Pp. 375-392, pls. 8. May, 1891.
- Report of the Botanist for 1891. By George Vasey. (From the Report of the Secretary of Agriculture for 1891.) Pp. 341-358, pls. 8. June, 1892.
- Report of the Botanist for 1892. By George Vasey. (From the Report of the Secretary of Agriculture for 1892.) Pp. 201-214. June, 1893.

DIVISION OF CHEMISTRY.

- Chemical Bulletin No. 13, part 4. *Foods and Food Adulterants—Lard and Lard Adulterations.* By H. W. Wiley. Pp. 403-554, pls. 29-38, figs. 16-25. June, 1889.
- Chemical Bulletin No. 13, part 5. *Foods and Food Adulterants—Baking Powders.* By C. A. Crampton. Pp. 557-627, fig. 26. October, 1889.
- Chemical Bulletin No. 13, part 6. *Foods and Food Adulterants—Sugar, Molasses and Sirup, Confections, Honey and Beeswax.* By H. W. Wiley, with the collaboration of H. A. Huston, H. H. Nicholson, W. B. Rising, M. A. Scovell, S. P. Sharples, W. C. Stubbs, Shippen Wallace, F. G. Wiechmann, H. A. Weber, and K. P. McElroy. Pp. 633-874. April, 1892.
- Chemical Bulletin No. 13, part 7. *Foods and Food Adulterants—Tea, Coffee, and Cocoa Preparations.* By Guilford L. Spencer, with the collaboration of Ervin E. Ewell. Pp. 875-1014, pls. 39-47. June, 1892.
- Chemical Bulletin No. 13, part 8. *Foods and Food Adulterants—Canned Vegetables.* By K. P. McElroy, with the collaboration of W. D. Bigelow. Pp. 1015-1167. August, 1893.
- Chemical Bulletin No. 20. *Record of Experiments Conducted by the Commissioner of Agriculture in the Manufacture of Sugar from Sorghum at Rio Grande, New Jersey; Kenner, Louisiana; Conway Springs, Douglas, and Sterling, Kansas.* By H. W. Wiley. Pp. 162. April, 1889.

- Chemical Bulletin No. 21. Report of Experiments in the Manufacture of Sugar by Diffusion, at Magnolia Station, Lawrence, Louisiana, season of 1888-'89. By Guilford L. Spencer. Pp. 67. August, 1889.
- Chemical Bulletin No. 22. Record of Experiments at Des Lignes Sugar Experiment Station, Baldwin, Louisiana, during the season of 1888. By C. A. Crampton. Pp. 36. October, 1889.
- Chemical Bulletin No. 23. Record of Experiments at the Sugar Experiment Station of Calumet Plantation, Pattersonville, Louisiana. By Hubert Edson. Pp. 42. October, 1889.
- Chemical Bulletin No. 24. Proceedings of the Sixth Annual Convention of the Association of Official Agricultural Chemists, held at the U. S. Department of Agriculture, September 10, 11, and 12, 1889. Methods of Analysis of Commercial Fertilizers, Cattle Foods, Dairy Products, and Fermented Liquors. Edited by H. W. Wiley, Secretary of the Association. Pp. 235. March, 1890.
- Chemical Bulletin No. 25. A Popular Treatise on the Extent and Character of Food Adulterations. By Alexander J. Wedderburn. Pp. 61. February, 1890.
- Chemical Bulletin No. 26. Record of Experiments in the Production of Sugar from Sorghum in 1889 at Cedar Falls, Iowa; Rio Grande, New Jersey; Morrisville, Virginia; Kenner, Louisiana; College Station, Maryland; and Conway Springs, Attica, Medicine Lodge, Ness City, Liberal, Arkalon, Meade, Minneola, and Sterling, Kansas. By H. W. Wiley. Pp. 112. April, 1890.
- Chemical Bulletin No. 27. The Sugar Beet Industry, Culture of the Sugar Beet and Manufacture of Beet Sugar. By H. W. Wiley. Pp. 262, pls. 11, figs. 49. September, 1890.
- Chemical Bulletin No. 28. Proceedings of the Seventh Annual Convention of the Association of Official Agricultural Chemists, held at the U. S. National Museum, August 28, 29, and 30, 1890. Methods of Analysis of Commercial Fertilizers, Foods, and Feeding Stuffs, Dairy Products, Fermented Liquors, and Sugars. Edited by H. W. Wiley, Secretary of the Association. Pp. 238, figs. 21. March, 1891.
- Chemical Bulletin No. 29. Record of Experiments with Sorghum in 1890. By H. W. Wiley. Pp. 126. May, 1891.
- Chemical Bulletin No. 30. Experiments with Sugar Beets in 1890. By H. W. Wiley. Pp. 94. May, 1891.
- Chemical Bulletin No. 31. Proceedings of the Eighth Annual Convention of the Association of Official Agricultural Chemists, held at the Columbian University, Washington, D. C., August 13, 14, and 15, 1891. Methods of Analysis of Commercial Fertilizers, Foods and Feeding Stuffs, Dairy Products, Fermented Liquors, and Sugars. Edited by H. W. Wiley, Secretary of the Association. Pp. 253. February, 1892.
- Chemical Bulletin No. 32. Special Report on the Extent and Character of Food Adulterations, including State and other Laws relating to Foods and Beverages. By Alexander J. Wedderburn. Pp. 174. April, 1892.
- Chemical Bulletin No. 33. Experiments with Sugar Beets in 1891. By H. W. Wiley, with the collaboration of Walter Maxwell, W. A. Henry, and others. Pp. 158. June, 1892.
- Chemical Bulletin No. 34. Record of Experiments with Sorghum in 1891. By H. W. Wiley, with the collaboration of G. L. Spencer, A. A. Denton, and Wibray J. Thompson. Pp. 132. June, 1892.
- Chemical Bulletin No. 35. Proceedings of the Ninth Annual Convention of the Association of Official Agricultural Chemists, held at the National Museum, Washington, D. C., August 25, 26, and 27, 1892. Edited by H. W. Wiley, Secretary of the Association. Pp. 243. December, 1892.

- Chemical Bulletin No. 36. Experiments with Sugar Beets in 1892. By H. W. Wiley, with the collaboration of Walter Maxwell. Pp. 74. March, 1893.
- Chemical Bulletin No. 37. Record of Experiments with Sorghum in 1892. By H. W. Wiley, with the collaboration of A. A. Denton, Glen O'Brien, C. I. Hinman, Wibray J. Thompson, J. I. Fuelling, and Oma Carr. Pp. 100. April, 1893.
- Chemical Bulletin No. 38. Proceedings of the Tenth Annual Convention of the Association of Official Agricultural Chemists, held at Chicago, Illinois, August 24, 25, and 26, 1893. Edited by H. W. Wiley, Secretary of the Association. Pp. 218. December, 1893.
- Farmers' Bulletin No. 3. Culture of the Sugar Beet. By H. W. Wiley. Pp. 24, figs. 9. March, 1891.
- Farmers' Bulletin No. 12. Nostrums for Increasing the Yield of Butter. By H. W. Wiley. Pp. 16. June, 1893.
- Report of the Chief of the Division of Chemistry for 1889. By H. W. Wiley. (From the Report of the Secretary of Agriculture for 1889.) Pp. 135-190. August, 1890.
- Report of the Chief of the Division of Chemistry for 1890. By H. W. Wiley. (From the Report of the Secretary of Agriculture for 1890.) Pp. 133-192. May, 1891.
- Report of the Chief of the Division of Chemistry for 1891. By H. W. Wiley. (From the Report of the Secretary of Agriculture for 1891.) Pp. 143-190. June, 1892.
- Report of the Chief of the Division of Chemistry for 1892. By H. W. Wiley. (From the Report of the Secretary of Agriculture for 1892.) Pp. 123-152. June, 1893.

DIVISION OF ENTOMOLOGY.

- Entomological Bulletin No. 6. (Second edition.) The Imported Elm Leaf-beetle: Its Habits and Natural History, and Means of Counteracting its Injuries. By C. V. Riley. Pp. 21, pl. 1, fig. 1. December, 1891.
- Entomological Bulletin No. 7. The Pediculi and Mallophaga Affecting Man and the Lower Animals. By Herbert Osborn. Pp. 56, figs. 42. April, 1891.
- Entomological Bulletin No. 20. The Root-Knot Disease of the Peach, Orange, and other Plants in Florida, due to the Work of Anguillula. By J. C. Neal, under the direction of the Entomologist. Pp. 31, pls. 31. October, 1889.
- Entomological Bulletin No. 21. Report of a Trip to Australia, made under Direction of the Entomologist, to Investigate the Natural Enemies of the Fluted Scale. By Albert Koebele. Pp. 32, figs. 16. February, 1890.
- Entomological Bulletin No. 22. Reports of Observations and Experiments in the Practical Work of the Division, made under the Direction of the Entomologist. Pp. 110, figs. 2. June, 1890.
- Entomological Bulletin No. 23. Reports of Observations and Experiments in the Practical Work of the Division, made under the Direction of the Entomologist. Pp. 84. May, 1891.
- Entomological Bulletin No. 24. The Boll Worm of Cotton: A Report of Progress in a Supplementary Investigation of this Insect, made under the Direction of the Entomologist, by F. W. Mally. Pp. 50, figs. 2. May, 1891.
- Entomological Bulletin No. 25. Destructive Locusts: A Popular Consideration of a Few of the More Injurious Locusts (or "Grasshoppers") of the United States, together with the Best Means of Destroying Them. By C. V. Riley. Pp. 62, pls. 12, figs. 11, 1 map. June, 1891.

- Entomological Bulletin No. 26. Reports of Observations and Experiments in the Practical Work of the Division, made under the Direction of the Entomologist. Pp. 95. June, 1892.
- Entomological Bulletin No. 27. Reports on the Damage by Destructive Locusts during the Season of 1891, made under the Direction of the Entomologist. Pp. 64. May, 1892.
- Entomological Bulletin No. 28. The More Destructive Locusts of America North of Mexico. By Lawrence Bruner. Pp. 40. April, 1893.
- Entomological Bulletin No. 29. Report on the Boll Worm of Cotton (*Heliothis armiger* Hübn.), made under the Direction of the Entomologist, by F. W. Mally. Pp. 73, pls. 2. May, 1893.
- Entomological Bulletin No. 30. Reports of Observations and Experiments in the Practical Work of the Division, made under the Direction of the Entomologist. Pp. 67. June, 1893.
- Entomological Bulletin No. 31. Catalogue of the Exhibit of Economic Entomology at the World's Columbian Exposition, Chicago, Ill., 1893, made under the Direction of the Entomologist. Pp. 121. August, 1893.
- The Horn Fly (*Hæmatobia serrata*), being an Account of its Life History and the Means to be Used against it. By C. V. Riley and L. O. Howard. (Reprinted from Insect Life, Vol. II, No. 4.) Pp. 93-103. December, 1889.
- Habits and Natural History of the Ox Bot in the United States. By C. V. Riley. (Reprinted from Insect Life, Vol. IV, Nos. 9 and 10.) Pp. 16. July, 1892.
- Insect Life. (Devoted to the economy and life habits of insects, especially in their relations to agriculture.)
- Vol. I, No. 1. Pp. 32, figs. 4. July 28, 1888.
- Vol. I, No. 2. Pp. 2, 33-62, figs. 5-9. August 23, 1888.
- Vol. I, No. 3. Pp. 63-92, figs. 10-12. October 2, 1888.
- Vol. I, No. 4. Pp. 2, 93-122, figs. 13-23. October 24, 1888.
- Vol. I, No. 5. Pp. 123-162, figs. 24-35. November 21, 1888.
- Vol. I, No. 6. Pp. 2, 163-200, pl. 1, figs. 36-45. December 24, 1888.
- Vol. I, No. 7. Pp. 2, 201-230, figs. 46-49. January 21, 1889.
- Vol. I, No. 8. Pp. II, 231-260, figs. 50-57. February 5, 1889.
- Vol. I, No. 9. Pp. II, 261-295, figs. 58-66. April 10, 1889.
- Vol. I, No. 10. Pp. II, 297-326, figs. 67-71. April 29, 1889.
- Vol. I, No. 11. Pp. II, 327-357, figs. 72-76. May 27, 1889.
- Vol. I, No. 12. Pp. 2, 359-388, with title and index to Vol. I (pp. xxxii). July 2, 1889.
- Vol. II, No. 1. Pp. 2, 30. July 20, 1889.
- Vol. II, No. 2. Pp. II, 31-60, figs. 6. August 30, 1889.
- Vol. II, No. 3. Pp. II, 61-90, figs. 7-10. September 21, 1889.
- Vol. II, No. 4. Pp. II, 91-123, figs. 11-18. November 2, 1889.
- Vol. II, No. 5. Pp. II, 125-162, figs. 19-27. December 5, 1889.
- Vol. II, No. 6. Pp. II, 163-197, figs. 28-35. January 5, 1890.
- Vol. II, Nos. 7 and 8. Pp. II, 198-262, figs. 36-56. March 1, 1890.
- Vol. II, No. 9. Pp. II, 263-292, figs. 57-60. March 26, 1890.
- Vol. II, No. 10. Pp. II, 293-334, figs. 61-65. May 9, 1890.
- Vol. II, Nos. 11 and 12. Pp. II, 335-390, figs. 66-71. July 2, 1890.
- Vol. III, No. 1. Pp. II, 42, figs. 3, with title and index to Vol. II (pp. viii, 391-418). August 21, 1890.
- Vol. III, No. 2. Pp. II, 43-88, figs. 4, 5. October 14, 1890.
- Vol. III, No. 3. Pp. II, 89-130, figs. 6-19. November 9, 1890.
- Vol. III, No. 4. Pp. II, 131-178, figs. 20, 21. December 8, 1890.
- Vol. III, No. 5. Pp. II, 179-250. January 17, 1891.
- Vol. III, No. 6. Pp. II, 251-304, pl. 1, figs. 22-26. April 14, 1891.

Insect life—Continued.

- Vol. III, Nos. 7 and 8. Pp. II, 305-358, figs. 27-29. May 11, 1891.
 Vol. III, Nos. 9 and 10. Pp. II, 359-432, fig. 30. June 20, 1891.
 Vol. III, Nos. 11 and 12. Pp. II, 433-519, figs. 31-35, with index, also contents (pp. VIII) to Vol. III. September 5, 1891.
 Vol. IV, Nos. 1 and 2. Pp. IV, 86, fig. 1. October 28, 1891.
 Vol. IV, Nos. 3 and 4. Pp. IV, 87-162, figs. 2-12. December 2, 1891.
 Vol. IV, Nos. 5 and 6. Pp. III, 163-230, figs. 13-26. January 16, 1892.
 Vol. IV, Nos. 7 and 8. Pp. II, 231-292, figs. 27-39. April 9, 1892.
 Vol. IV, Nos. 9 and 10. Pp. III, 293-352, figs. 40-56. June 27, 1892.
 Vol. IV, Nos. 11 and 12. Pp. III, 353-441, figs. 57-77, with index, also contents (pp. VIII) to Vol. IV. August 26, 1892.
 Vol. V, No. 1. Pp. III, 62, figs. 6. September 27, 1892.
 Vol. V, No. 2. Pp. III, 63-146, figs. 7-9. November 21, 1892.
 Vol. V, No. 3. Pp. III, 147-212, figs. 10-22. January 27, 1893.
 Vol. V, No. 4. Pp. III, 213-268, pl. 1, figs. 23-37. May 4, 1893.
 Vol. V, No. 5. Pp. III, 269-402, pls. 2, 3, figs. 38-47, with index, also contents (pp. VII) to Vol. V. August 12, 1893.
 Vol. VI, No. 1. Pp. III, 58, fig. 1. November 23, 1893.
 Vol. VI, No. 2. Pp. III, 59-206, figs. 2-5. December 8, 1893.
- Entomological Circular No. 1, second series. Condensed Information concerning Some of the More Important Insecticides.** Pp. 7. May, 1891.
- Entomological Circular No. 2, second series. The Hop Plant-louse and the Remedies to be Used Against It.** Pp. 7, pl. 1, figs. 5. June, 1891.
- The Insectivorous Habits of the English Sparrow.** By C. V. Riley. (Reprinted from Bulletin No. 1 of the Division of Ornithology and Mammalogy.) Pp. 111-133. 1889.
- Fifth Report of the U. S. Entomological Commission, being a revised and enlarged edition of Bulletin No. 7, on Insects injurious to Forest and Shade Trees.** By Alpheus S. Packard. (House of Representatives Mis. Doc. No. 269, Fifty-first Congress, first session.) Pp. 957, pls. 40, figs. 306. March, 1891.
- Insecticides and Means of Applying them to Shade and Forest Trees.** By C. V. Riley. (Reprinted from the Fifth Report of the U. S. Entomological Commission.) Pp. 31-47. February, 1890.
- Insects affecting the Hackberry (various species of Celtis).** By C. V. Riley. (Reprinted from the Fifth Report of the U. S. Entomological Commission.) Pp. 601-622, figs. 196-203. October, 1890.
- Bibliography of the More Important Contributions to American Economic Entomology.** Prepared, by authority of the Secretary of Agriculture, by Samuel Henshaw. Parts 1, 2, and 3. The More Important Writings of Benjamin Dann Walsh and Charles Valentine Riley. (Printed in pursuance of a concurrent resolution of the Congress, passing the House June 24, 1882, and the Senate July 6, 1882, Forty-seventh Congress, first session.) Pp. 451. April, 1890. v. 9.
- Parts I to III and Index of the Bibliography of the More Important Contributions to American Economic Entomology, printed separately:**
- Part I. The More Important Writings of Benjamin Dann Walsh. Pp. 49. March, 1890.
- Part II. The More Important Joint Writings of B. D. Walsh and C. V. Riley. Pp. 51-95. March, 1890.
- Part III. The More Important Writings of Charles Valentine Riley. Pp. 97-380. March, 1890.
- Index to Parts I, II, and III.** Pp. 381-454. March, 1890.

- The Plum Curculio** (*Conotrachelus nenuphar* Herbst). By C. V. Riley and L. O. Howard. (From the report of the Entomologist in the Report of the Commissioner of Agriculture for 1888.) Pp. 57-79. June, 1889.
- Report on Experiments with Remedies Against the Hop-louse.** By W. B. Alwood. (From the report of the Entomologist in the Report of the Commissioner of Agriculture for 1888.) Pp. 102-111. June, 1889.
- Report on Various Methods for Destroying Scale-insects.** By D. W. Coquillett. (From the report of the Entomologist in the Report of the Commissioner of Agriculture for 1888.) Pp. 123-133. June, 1889.
- Entomological Notes of the Season of 1888.** By Mary E. Murtfeldt, Kirkwood, Mo. (From the report of the Entomologist in the Report of the Commissioner of Agriculture for 1888.) Pp. 133-139. June, 1889.
- Report on Nebraska Insects.** By Lawrence Bruner. (From the report of the Entomologist in the Report of the Commissioner of Agriculture for 1888.) Pp. 139-141. June, 1889.
- Experiments on the Boll Worm Injuring Tomatoes.** By S. M. Tracy. (From the report of the Entomologist in the Report of the Commissioner of Agriculture for 1888.) Pp. 141-142. June, 1889.
- Description of *Leonia rileyi*, a new Meloïd Genus near *Hornia*.** By Dr. Eugène Dugés, Guanajuato, Mexico. (Extracted from *Insect Life*, Vol. I, No. 7.) Pp. 211-213. January 1889.
- Report of the Entomologist for 1888.** By C. V. Riley. (From the Report of the Commissioner of Agriculture for 1888.) Pp. iv, 53-144, iv, pls. 12. June, 1889.
- Report of the Entomologist for 1889.** By C. V. Riley. (From the Report of the Secretary of Agriculture for 1889.) Pp. iv, 331-361, iii, pls. 2. August, 1890.
- Report of the Entomologist for 1890.** By C. V. Riley. (From the Report of the Secretary of Agriculture for 1890.) Pp. 237-264, pls 7. May, 1891.
- Report of the Entomologist for 1891.** By C. V. Riley. (From the Report of the Secretary of Agriculture for 1891.) Pp. iii, 231-266, ii. June, 1892.
- Report of the Entomologist for 1892.** By C. V. Riley. (From the Report of the Secretary of Agriculture for 1892.) Pp. iii, 153-180, ii, pls. 12. July, 1893.

OFFICE OF EXPERIMENT STATIONS.

- Experiment Station Bulletin No. 1.** Organization of the Agricultural Experiment Stations in the United States. Pp. 82. April, 1889.
- Experiment Station Bulletin No. 2, part 1.** Digest of the Annual Reports of the Agricultural Experiment Stations in the United States for 1888. Pp. 258. October, 1889.
- Experiment Station Bulletin No. 2, part 2.** Digest of the Annual Reports of the Agricultural Experiment Stations in the United States for 1888. Pp. 173. July, 1891.
- Experiment Station Bulletin No. 3.** Report of a Meeting of Horticulturists of the Agricultural Experiment Stations, at Columbus, Ohio, June 13, 14, 1889. By A. W. Harris. Pp. 12. September, 1889.
- Experiment Station Bulletin No. 4.** List of Horticulturists of the Agricultural Experiment Stations in the United States, with an Outline of the Work in Horticulture at the Several Stations. By W. B. Alwood. Pp. 27. January, 1890.
- Experiment Station Bulletin No. 5.** Lists of the Agricultural Experiment Stations and Agricultural Schools and Colleges in the United States. Pp. 87. May, 1890.

- Experiment Station Bulletin No. 6. List of Botanists of the Agricultural Experiment Stations in the United States, with an Outline of the Work in Botany at the Several Stations. Pp. 23. June, 1890.
- Experiment Station Bulletin No. 7. Proceedings of the Fifth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, held at Washington, D. C., August 12-18, 1891. Edited by A. W. Harris and H. E. Alvord. Pp. 113. April, 1892.
- Experiment Station Bulletin No. 8. Six Lectures on the Investigations at Rothamsted Experimental Station, delivered under the Provisions of the Lawes Agricultural Trust by Robert Warington, F. R. S., before the Association of American Agricultural Colleges and Experiment Stations, at Washington, D. C., August 12-18, 1891. Pp. 113, pls. 11. June, 1892.
- Experiment Station Bulletin No. 9. The Fermentations of Milk. By H. W. Conn. Pp. 75. June, 1892.
- Experiment Station Bulletin No. 10. Meteorological Work for Agricultural Institutions. By Mark W. Harrington. Pp. 23. March, 1892.
- Experiment Station Bulletin No. 11. A Compilation of Analyses of American Feeding Stuffs. By E. H. Jenkins and A. L. Winton. Pp. 155. December, 1892.
- Experiment Station Bulletin No. 12. Organization Lists of the Agricultural Experiment Stations and Agricultural Schools and Colleges in the United States. Pp. 78. June, 1892.
- Experiment Station Bulletin No. 13. Organization Lists of the Agricultural Experiment Stations and Agricultural Schools and Colleges in the United States. Pp. 123. June, 1893.
- Experiment Station Bulletin No. 14. Proceedings of a Convention of the National League for Good Roads, held at Washington, D. C., January 17 and 18, 1893, and Hearing by the Committee on Agriculture of the House of Representatives January 19, 1893. Pp. 101. July, 1893.
- Experiment Station Bulletin No. 15. Handbook of Experiment Station Work. A Popular Digest of the Publications of the Agricultural Experiment Stations in the United States. Pp. 411. December, 1893.
- Experiment Station Bulletin No. 16. Proceedings of the Sixth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, held at New Orleans, Louisiana, November 15-19, 1892. Edited by A. W. Harris and H. E. Alvord. Pp. 176. September, 1893.
- Experiment Station Bulletin No. 17. Suggestions for the Establishment of Food Laboratories in connection with the Agricultural Experiment Stations of the United States. By Edward Atkinson. Pp. 20. October, 1893.
- Miscellaneous Bulletin No. 1. Proceedings of the Second Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, held at Knoxville, Tenn., January 1, 2, and 3, 1889. Edited by A. W. Harris and H. E. Alvord. Pp. 123. August, 1889.
- Miscellaneous Bulletin No. 2. Proceedings of the Third Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, held at Washington, D. C., November 12, 13, 14, and 15, 1889. Edited by A. W. Harris and H. E. Alvord. Pp. 142. July, 1890.
- Miscellaneous Bulletin No. 3. Proceedings of the Fourth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, held at Champaign, Ill., November 11, 12, and 13, 1890. Edited by A. W. Harris and H. E. Alvord. Pp. 156. August, 1891.
- Farmers' Bulletin No. 1. The What and Why of Agricultural Experiment Stations. Pp. 16. June, 1889.*

Farmers' Bulletin No. 2. The Work of the Agricultural Experiment Stations. (Better cows; fibrin in milk; bacteria in milk; silos and silage; alfalfa; field experiments with fertilizers.) Pp. 16. June, 1890.

Farmers' Bulletin No. 9. Milk Fermentations and their Relations to Dairying. Pp. 24. July, 1892.

Farmers' Bulletin No. 11. The Rape Plant: Its History, Culture, and Uses. By Thomas Shaw, Professor of Agriculture in the Ontario Agricultural College. Pp. 20, figs. 4. June, 1893.

Experiment Station Record. (A condensed record of the contents of the bulletins and reports issued by the Agricultural Experiment Stations in the United States.)

Vol. I, No. 1. Pp. ix, 56. November, 1889.

Vol. I, No. 2. Pp. viii, 57-116. March, 1890.

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Vol. I, No. 4. Pp. viii, 175-244. May, 1890.

Vol. I, No. 5. Pp. vii, 245-308. June, 1890.

Vol. I, No. 6. Pp. iv, 309-358, iii (with index to Vol. I). August, 1890.

Vol. II, No. 1. Pp. iv, 40. August, 1890.

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Vol. II, No. 3. Pp. iv, 89-138. October, 1890.

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Vol. II, No. 5. Pp. vi, 185-264. December, 1890.

Vol. II, No. 6. Pp. v, 265-308. January, 1891.

Vol. II, No. 7. Pp. vi, 309-384. February, 1891.

Vol. II, No. 8. Pp. vii, 385-468. March, 1891.

Vol. II, No. 9. Pp. vii, 469-540. April, 1891.

Vol. II, No. 10. Pp. vii, 541-624. May, 1891.

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Vol. II, No. 12. Pp. vi, 699-853, xxxii (with index to Vol. II). July, 1891.

Vol. III, No. 1. Pp. iv, 72. August, 1891.

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Vol. III, No. 3. Pp. iv, 139-206. October, 1891.

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Vol. III, No. 9. Pp. vii, 585-664. April, 1892.

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Vol. III, No. 11. Pp. vii, 759-840. June, 1892.

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Vol. IV, No. 11. Pp. vii, 879-994. September, 1893.

Vol. IV, No. 12 (index). Pp. 995-1086, xxx. December, 1893.

Vol. V, No. 1. Pp. viii, 138. December, 1893.

Circulars of the Office of Experiment Stations. (Circulars Nos. 1, 2, 3, 4, 5, 9, 10, 12, 13, 14, 15, 16, 21 are mostly letters of inquiry or of transient value and not intended for general distribution):

Circular No. 1 of the Office of Experiment Stations. List of Agricultural Experiment Stations in the United States, with names and addresses of directors. Pp. 7. February, 1889.

Circular No. 2 of the Office of Experiment Stations. Letter suggesting meeting of Eastern and Southern Stations to discuss coöperative field experiments. Pp. 2. January, 1889.

Circular No. 3 of the Office of Experiment Stations. Letter asking for names of originators of fruits and vegetables. Pp. 3. February, 1889.

Circular No. 4 of the Office of Experiment Stations. Memorandum for Station Reports. Pp. 4. February, 1889.

Circular No. 5 of the Office of Experiment Stations. Call for meeting of Stations in Washington, D. C., March 5, 1889, to discuss cooperative field experiments. Pp. 1. February, 1889.

Circular No. 6 of the Office of Experiment Stations. List of originators of fruits, vegetables, etc., in the United States. Pp. 8 (manifold script), size 8 by 12½ inches. March, 1889.

Circular No. 7 of the Office of Experiment Stations. Coöperative Field Experiments with Fertilizers. Pp. 39. April, 1889.

Circular No. 8 of the Office of Experiment Stations. Explanations and Directions for Soil Tests with Fertilizers. Pp. 11. April, 1889.

Circular No. 9 of the Office of Experiment Stations. Memorandum of Information for a Report on Farmers' Institutes in the United States. Pp. 3, letter size. May, 1889.

Circular No. 10 of the Office of Experiment Stations. Letter asking reports regarding special horticultural work. July, 1889.

Circular No. 11 of the Office of Experiment Stations. Rules for Naming Vegetables. Report of Committee of Experiment Station Horticulturists. Pp. 3. October, 1889.

Circular No. 12 of the Office of Experiment Stations. Relative to the library and publications of the Office of Experiment Stations. Pp. 3. July, 1889.

Circular No. 13 of the Office of Experiment Stations. Letter relative to meeting of Station specialists. Pp. 3. October, 1889.

Circular No. 14 of the Office of Experiment Stations. Letter announcing meeting of Association of Economic Entomologists. Pp. 3. October, 1889.

Circular No. 15 of the Office of Experiment Stations. Inquiries regarding investigations in botany at the Agricultural Colleges and Experiment Stations. Pp. 4. January, 1890.

Circular No. 16 of the Office of Experiment Stations. Blank application for technical publications of Office of Experiment Stations. Pp. 2. January, 1890.

Circular No. 17 of the Office of Experiment Stations. Letter to Manufacturers of Spray Machinery. Pp. 2. January, 1891.

Circular No. 18 of the Office of Experiment Stations. List of Originators of Fruits and Vegetables in the United States, with Addresses and Names of Specialties. Pp. 12. March, 1891.

Circular No. 19 of the Office of Experiment Stations. Circular letter relative to coöperation in experiments with fertilizers on fruit and vegetables, to study the feeding capacities of the plants and the variations due to the action of fertilizers. Pp. 4. March, 1891.

Circular No. 20 of the Office of Experiment Stations. Organization list of the Agricultural Experiment Stations in the United States. Pp. 21. June, 1891.

Circulars of the Office of Experiment Stations—Continued.

Circular No. 21 of the Office of Experiment Stations. List of the representatives of Agricultural Colleges and Experiment Stations who were in attendance upon the fifth annual convention of the Association of American Agricultural Colleges and Experiment Stations. Printed for the use of the convention. Pp. 4. August, 1891.

Circular No. 22 of the Office of Experiment Stations. Letter relative to subject index of the literature of Agricultural Experiment Stations and kindred institutions. Pp. 4. November, 1891.

Circular No. 23 of the Office of Experiment Stations. Key to Subject Index of Literature of Agricultural Experiment Stations and Kindred Institutions. Pp. 3. December, 1893.

Circular No. 24 of the Office of Experiment Stations. Address List of the Agricultural Experiment Stations. Pp. 1. December, 1893.

Report of the Director of the Office of Experiment Stations for 1889. By W. O. Atwater. (From the Report of the Secretary of Agriculture for 1889.) Pp. 485-544, IV. August, 1890.

Report of the Director of the Office of Experiment Stations for 1890. By W. O. Atwater. (From the Report of the Secretary of Agriculture for 1890.) Pp. 489-555, III. May, 1891.

Report of the Director of the Office of Experiment Stations for 1891. By A. W. Harris. (From the Report of the Secretary of Agriculture for 1891.) Pp. 503-538, II; 1 map. June, 1892.

Report of the Director of the Office of Experiment Stations for 1892. By A. W. Harris. (From the Report of the Secretary of Agriculture for 1892.) Pp. 515-549. June, 1893.

OFFICE OF FIBER INVESTIGATIONS.

Fiber Report No. 1. A Report on Flax, Hemp, Ramie, and Jute, with Considerations upon Flax and Hemp Culture in Europe, a Report on the Ramie Machine Trials of 1889 in Paris, and Present Status of Fiber Industries in the United States. By Charles Richards Dodge. (Reprint of Report No. 1, Miscellaneous Series, of the Division of Statistics.) Pp. 104, figs. 7. June, 1892.

Fiber Report No. 2. Recent Facts regarding the Ramie Industry in America, with Brief Statements Relating to Manufacture in Europe, etc. By Charles Richards Dodge. (Reprinted from Statistical Report No. 84.) Pp. 16. May, 1891.

Fiber Report No. 3. A Report on Sisal Hemp Culture in the United States, with Statements Relating to the Industry in Yucatan and the Bahama Islands, and Brief Considerations upon the Question of Machinery for Extracting the Fiber. By Charles Richards Dodge. Pp. 59, pls. 8, figs. 21. July, 1891.

Fiber Report No. 4. A Report on Flax Culture for Fiber in the United States, including Special Reports on Flax Culture in Ireland, in Belgium, and in Austria, with Statements relative to the Industry in Russia. By Charles Richards Dodge. Pp. 93, pls. 2, figs. 12. July, 1892.

Fiber Report No. 5. A Report on the Leaf Fibers of the United States, detailing Results of Recent Investigations Relating to Florida Sisal Hemp, the False Sisal Hemp Plant of Florida, and other Fiber-producing Agaves; Bow-string Hemp, Pineapple Fiber, New Zealand Flax, and Bear-grass. By Charles Richards Dodge. Pp. 73, pls. 10, figs. 12. July, 1893.

Annual Report upon Fiber Investigations for 1890. By Charles Richards Dodge. (From the Report of the Secretary of Agriculture for 1890.) Pp. 451-470. April, 1891.

Annual Report upon Fiber Investigations for 1891. By Charles Richards Dodge. (From the Report of the Secretary of Agriculture for 1891.) Pp. 417-438, pls. 2, figs. 11. June, 1892.

Annual Report upon Fiber Investigations for 1892. By Charles Richards Dodge. (From the Report of the Secretary of Agriculture for 1892.) Pp. 359-376, pls. 6, figs. 4. June, 1893.

DIVISION OF FORESTRY.

Forestry Bulletin No. 1. Report on the Relations of Railroads to Forest Supplies and Forestry: Together with Appendices on the Structure of Some Timber Ties, their Behavior, and the Cause of their Decay in the Road-bed; on Wood Preservation; on Metal Ties; and on the Use of Spark Arresters. (By B. E. Fernow, M. G. Kern, P. H. Dudley, Henry Flad, Howard Constable, W. H. Bixby, N. H. Egleston, J. N. Lander, and G. W. Tilton.) Pp. 149, pls. 21, figs. 7. 1887.

Forestry Bulletin No. 2. Report on the Forest Conditions of the Rocky Mountains, and Other Papers; with a Map Showing the Location of Forest Areas on the Rocky Mountain Range. Second edition. (By E. J. James, Edgar T. Ensign, George B. Sudworth, Abbott Kinney, Arnold Hague, N. H. Egleston, George H. Parsons, and B. E. Fernow.) Pp. 252, 1 map, 1 diagram. May, 1889.

Forestry Bulletin No. 3. Preliminary Report on the Use of Metal Track on Railways as a Substitute for Wooden Ties, by E. E. Russell Tratman, C. E., to which is added a report of experiments in wood seasoning by the Chicago, Burlington, and Quincy Railroad Company, and other notes, compiled by B. E. Fernow. Pp. 79, diagrams 6. May, 1889.

Forestry Bulletin No. 4. Report on the Substitution of Metal for Wood in Railroad Ties. By E. E. Russell Tratman, C. E., together with a Discussion on Practicable Economies in the Use of Wood for Railway Purposes, by B. E. Fernow. Pp. 363, pls. 30. August, 1890.

Forestry Bulletin No. 5. What is Forestry? By B. E. Fernow. Pp. 52. July, 1891.

Forestry Bulletin No. 6. Timber Physics. Part 1. Preliminary Report: Need of the Investigation; Scope and Historical Development of the Science of Timber Physics; Organization and Methods of the Timber Examinations in the Division of Forestry. Compiled by B. E. Fernow. Quarto, pp. iii, 57, iv, pls. 6, figs. 10. May, 1892.

Forestry Bulletin No. 7. Forest Influences. (Contents: Introduction and Summary of Conclusions, by B. E. Fernow; Review of Forest Meteorological Observations, etc., by M. W. Harrington; Relation of Forests to Water Supplies, by B. E. Fernow; Notes on the Sanitary Significance of Forests, by B. E. Fernow; Determination of the True Amount of Precipitation and its Bearing on Theories of Forest Influences, by Cleveland Abbe; Analysis of Rainfall with Relation to Surface Conditions, by George E. Curtiss). Pp. 197, figs. 63. June, 1893.

Forestry Bulletin No. 8. Timber Physics. Part 2. Progress Report: Results of Investigations on Long-leaf Pine (*Pinus palustris*). (Contents: Mechanical Tests made at Washington University Testing Laboratory, St. Louis, Mo., by J. B. Johnson; the Long-leaf Pine, its Characteristics and Distribution, by B. E. Fernow; Results of Mechanical Tests, by J. B. Johnson; Field Report on Turpentine Timber, by Filibert Roth; Resinous Contents and their Distribution in the Long-leaf Pine, by M. Gomberg; Field Records of Test Material, by Charles Mohr.) Quarto, pp. vii, 92, pls. 12, figs. 22. June, 1893.

Timber Physics—Preliminary Report: Need of the Investigation. By B. E. Fernow. (From Forestry Bulletin No. 6.) Quarto, pp. iii, 16. March, 1892.

Letter to the Secretary of Agriculture regarding Forest Growth and Timber Consumption. By B. E. Fernow. Pp. 3. April, 1893.

- Circular No. 5 of the Division of Forestry.** Arbor Day Planting in Eastern States. (Brief instructions on selecting and planting trees for Arbor Day purposes.) Pp. 4, size 8 by 10 inches. March, 1889.
- Circular No. 6 of the Division of Forestry.** Circular letter to accompany tree seeds distributed from the Department of Agriculture, and furnishing necessary instructions for growing tree seedlings. Pp. 4, letter size. February, 1890.
- Circular No. 7 of the Division of Forestry.** Circular of information regarding the Government timber tests undertaken by the Division of Forestry. Pp. 4. September, 1891.
- Circular No. 8 of the Division of the Forestry.** Strength of "Boxed" or Turpentine Timber. Pp. 3. March, 1892.
- Circular No. 9 of the Division of Forestry.** Effect of Turpentine Gathering on the Timber of Long-leaf Pine. Pp. 1. January, 1893.
- Circular No. 10 of the Division of Forestry.** Suggestions to the Lumbermen of the United States in behalf of More Rational Forest Management. Pp. 8. April, 1893.
- Report of the Chief of the Division of Forestry for 1888.** By B. E. Fernow. (From the Report of the Commissioner of Agriculture for 1888.) Pp. iv, 597-641, pl. 1. June, 1889.
- Report of the Chief of the Division of Forestry for 1889.** By B. E. Fernow. (From the Report of the Secretary of Agriculture for 1889.) Pp. iv, 273-330, figs. 3. August, 1890.
- Report of the Chief of the Division of Forestry for 1890.** By B. E. Fernow. (From the Report of the Secretary of Agriculture for 1890.) Pp. iii, 193-236. May, 1891.
- Report of the Chief of the Division of Forestry for 1891.** By B. E. Fernow. (From the Report of the Secretary of Agriculture for 1891.) Pp. 191-229, pls. 8. June, 1892.
- Report of the Chief of the Division of Forestry for 1892.** By B. E. Fernow. (From the Report of the Secretary of Agriculture for 1892.) Pp. iii, 293-358, pls. 6, 1 diagram. July, 1893.

DIVISION OF GARDENS AND GROUNDS.

- Papers on Horticultural and Kindred Subjects.** By William Saunders. (Reprinted from various annual reports of the Department of Agriculture.) Pp. 124. July, 1891.
- Catalogue of Economic Plants in the Collection of the United States Department of Agriculture.** By William Saunders. (Reprinted from the Report of the Secretary of Agriculture for 1890.) Pp. 42. July, 1891.
- Report of the Chief of the Division of Gardens and Grounds for 1889.** By William Saunders. (From the Report of the Secretary of Agriculture for 1889.) Pp. 111-134. July, 1890.
- Report of the Chief of the Division of Gardens and Grounds for 1890.** By William Saunders. (From the Report of the Secretary of Agriculture for 1890.) Pp. 557-596. May, 1891.
- Report of the Chief of the Division of Gardens and Grounds for 1891.** By William Saunders. (From the Report of the Secretary of Agriculture for 1891.) Pp. 463-484, pls. 7. June, 1892.
- Report of the Chief of the Division of Gardens and Grounds for 1892.** By William Saunders. (From the Report of the Secretary of Agriculture for 1892.) Pp. iii, 377-402. June, 1893.

OFFICE OF IRRIGATION INQUIRY.

Bulletin No. 1, Office of Irrigation Inquiry. Abstract of the Laws of the Several States and Territories on Irrigation and Water Rights. Compiled by O.A. Critchett. Pp. 180. September, 1893.

Senate Executive Document No. 53, Fifty-first Congress, first session:

Part 1. Progress Report on Irrigation in the United States. By Richard J. Hinton. Pp. 337, with maps, plats, and profiles. April, 1891.

Part 2. Progress Report of Artesian and Underflow Investigation between the Ninety-seventh Degree of West Longitude and the Foothills of the Rocky Mountains, with map and profiles. By Edwin S. Nettleton. Pp. 14; appendices 10. May, 1891.

Senate Executive Document No. 222, Fifty-first Congress, first session. Report on the Preliminary Investigation to Determine the Proper Location of Artesian Wells within the Area of the Ninety-seventh Meridian and East of the Foothills of the Rocky Mountains. Pp. 398, with illustrations and maps. January, 1891.

Senate Executive Document No. 41, Fifty-second Congress, first session:

Part 1. A Report on Irrigation and the Cultivation of the Soil thereby, with Physical Data, Conditions, and Progress within the United States for 1891. By Richard J. Hinton. Pp. 459, with maps, charts, and other illustrations. June, 1892.

Part 2. Artesian and Underflow Investigation: Final Report of the Chief Engineer, Edwin S. Nettleton, C. E., to the Secretary of Agriculture. Pp. 116, with maps, profiles, and tabulated data. June, 1892.

Part 3. Final Geological Reports of the Artesian and Underflow Investigation between the Ninety-seventh Meridian of Longitude and the Foothills of the Rocky Mountains, to the Secretary of Agriculture. By Prof. Robert Hay. Pp. 209, with maps, profiles, and illustrations. June, 1892.

Part 4. Final Report on the Mid-plains Division of the Artesian and Underflow Investigation between the Ninety-seventh Meridian of Longitude West of Greenwich and the Foothills of the Rocky Mountains, and a Special Report on Certain Artesian Conditions in the State of South Dakota. By J. W. Gregory and Fred. F. B. Coffin. Pp. 61, figs. 20, and profiles. June, 1892.

Report of the Special Agent in Charge of the Artesian and Underflow Investigations and of the Irrigation Inquiry for 1890. By Richard J. Hinton. (From the Report of the Secretary of Agriculture for 1890.) Pp. 471-488, with map. May, 1891.

Report of the Special Agent in Charge of the Artesian and Underflow Investigations and of the Irrigation Inquiry for 1891. By Richard J. Hinton. (From the Report of the Secretary of Agriculture for 1891.) Pp. 450, with map. June, 1892.

DIVISION OF MICROSCOPY.

Food Products. Twelve Edible Mushrooms of the United States, Illustrated with Twelve Colored Types: How to Select and Prepare for the Table. By Thomas Taylor. (A reprint from the Report of the Commissioner of Agriculture for 1885.) Pp. 16, pl. 1. July, 1890.

Food Products, No. 1. Twelve Edible Mushrooms of the United States, with Directions for their Identification and their Preparation as Food. By Thomas Taylor. (A reprint of the preceding publication, with an appendix on the Preparation of Mushroom Beds.) Pp. 20, pl. 1. December, 1892.

Food Products, No. 2. Eight Edible and Twelve Poisonous Mushrooms of the United States, with Directions for the Culture and Culinary Preparation of the Edible Species. By Thomas Taylor. (A reprint of "Mushrooms of the United States," from the Report of the Secretary of Agriculture for 1890, pp. 365-374, with a brief appendix: List of the Edible Fungi of the United States.) Pp. 16, pls. 5. October, 1891.

Report of the Microscopist for 1889. By Thomas Taylor. (From the Report of the Secretary of Agriculture for 1889.) Pp. 191-209, pls. 13 (8+5). August, 1890.

Report of the Microscopist for 1890. By Thomas Taylor. (From the Report of the Secretary of Agriculture for 1890.) Pp. 361-374, pls. 11. May, 1890.

Report of the Microscopist for 1891. By Thomas Taylor. (From the Report of the Secretary of Agriculture for 1891.) Pp. 405-416, pls. 9. June, 1892.

Report of the Microscopist for 1892. By Thomas Taylor. (From the Report of the Secretary of Agriculture for 1892.) Pp. 281-292, pls. 9. June, 1893.

DIVISION OF ORNITHOLOGY AND MAMMALOLOGY.

Ornithological Bulletin No. 1. The English Sparrow in North America, especially in its Relations to Agriculture. Prepared under the direction of Dr. C. Hart Merriam, by Walter B. Barrows. Pp. 405, 1 map. July, 1889.

Ornithological Bulletin No. 2. Report on Bird Migration in the Mississippi Valley in the years 1884 and 1885, by W. W. Cooke. Pp. 313, 1 map. 1888.

Ornithological Bulletin No. 3. The Hawks and Owls of the United States, in their Relation to Agriculture. By A. K. Fisher. Pp. 210, pls. 26. February, 1893.

Ornithological Bulletin No. 4. The Prairie Ground Squirrels or Speromphiles of the Mississippi Valley. By Vernon Bailey. Pp. 69, pls. 3. October, 1893.

North American Fauna, No. 1. Revision of the North American Pocket Mice. By C. Hart Merriam. Pp. 36, pls. 4. October 25, 1889.

North American Fauna, No. 2. Description of Fourteen New Species and One New Genus of North American Mammals. By C. Hart Merriam. Pp. v, 52, pls. 8, figs. 7. October 30, 1889.

North American Fauna, No. 3. Results of a Biological Survey of the San Francisco Mountain Region and Desert of the Little Colorado, Arizona. By C. Hart Merriam and Leonhard Stejneger. Pp. vii, 136, pls. 14, maps 5. September 11, 1890.

North American Fauna, No. 4. Descriptions of twenty-six new species of North American Mammals. By C. Hart Merriam. Pp. v, 60, pls. 3, figs. 3. October 8, 1890.

North American Fauna, No. 5. Results of Biological Reconnaissance of South-central Idaho, and Descriptions of a New Genus and Two New Species of North American Mammals. By C. Hart Merriam and Leonhard Stejneger. Pp. 132, pls. 4. August 12, 1891.

North American Fauna, No. 7. The Death Valley Expedition: A Biological Survey of Parts of California, Nevada, Arizona, and Utah. Part 2. (Reports on birds, by A. K. Fisher; reptiles and batrachians, by Leonhard Stejneger; fishes, by Charles H. Gilbert; insects, by C. V. Riley; mollusks, by R. E. C. Stearns; desert trees and shrubs, by C. Hart Merriam; desert cactuses, by C. Hart Merriam, and yuccas, by C. Hart Merriam, and list of localities of the region traversed, by T. S. Palmer.) Pp. 402, pls. 14, maps 5. May 31, 1893.

Annotated List of Reptiles and Batrachians collected by Dr. C. Hart Merriam and Vernon Bailey on the San Francisco Mountain Plateau and Desert of the Little Colorado, Arizona, with Descriptions of New Species. By Leonhard Stejneger. (Reprinted from North American Fauna, No. 3.) Pp. 103-123. October, 1890.

Report on the Ornithology of the Death Valley Expedition of 1891, comprising notes on the Birds Observed in Southern California, Southern Nevada, and parts of Arizona and Utah. By A. K. Fisher. (From North American Fauna, No. 7.) Pp. 7-158, map 1. July, 1893.

Annotated List of the Reptiles and Batrachians collected by the Death Valley Expedition in 1891, with Descriptions of New Species. By Leonhard Stejneger, with field notes by C. Hart Merriam. (From North American Fauna, No. 7.) Pp. 159-228, pls. 4. July, 1893.

Report on the Fishes of the Death Valley Expedition, Collected in Southern California and Nevada in 1891, with Descriptions of New Species. By Charles H. Gilbert. (From North American Fauna, No. 7.) Pp. 229-234, pls. 5, 6. July, 1893.

Report on a Small Collection of Insects Made During the Death Valley Expedition; List of Diptera from Death Valley, California, and adjoining Regions; Hemiptera and Heteroptera of the Death Valley Expedition. By C. V. Riley, with supplementary reports and descriptions of new species by S. W. Williston, P. R. Uhler, and Lawrence Bruner. (From North American Fauna, No. 7.) Pp. 235-268. July, 1893.

Report on the Land and Fresh-water Shells Collected in California and Nevada by the Death Valley Expedition, including a few additional Species Obtained by Dr. C. Hart Merriam and Assistants in parts of the Southwestern United States. By Robert E. C. Stearns. (From North American Fauna, No. 7.) Pp. 269-283, figs. 2. July, 1893.

Notes on the Distribution of Trees and Shrubs in the Deserts and Desert Ranges of Southern California, Southern Nevada, Northwestern Arizona, and Southwestern Utah; Notes on the Geographic and Vertical Distribution of Cactuses, Yuccas, and Agave, in the Deserts and Desert Ranges of Southern California, Southern Nevada, Northwestern Arizona, and Southwestern Utah. By C. Hart Merriam. (From North American Fauna, No. 7.) Pp. 285-359, pls. 9, maps 4. July, 1893.

List of Localities in California, Nevada, and Utah, Visited by the Death Valley Expedition of 1891. By T. S. Palmer. (From North American Fauna, No. 7.) Pp. 361-384. July, 1893.

Circulars of the Division of Ornithology and Mammalogy:

No. 10. Circular on Killdeer Plover. (Letter of inquiry.) Pp. 1. January, 1889.

No. 11. Brief Directions for the Measurement of Small Mammals and the Preparation of Museum Skins. Pp. 4, pl. 1. March, 1889.

No. 12. Directions for Collecting the Stomachs of Birds. Pp. 3. April, 1891.

Nos. 13 and 14. (Office stationery.)

Report of the Ornithologist and Mammalogist for 1888. By C. Hart Merriam. (From the Report of the Commissioner of Agriculture for 1888.) Pp. III, 477-536, pl. 1, figs. 2. June, 1889.

Report of the Ornithologist and Mammalogist for 1889. By C. Hart Merriam. (From the Report of the Secretary of Agriculture for 1889.) Pp. 363-376, pls. 2. August, 1890.

Report of the Ornithologist and Mammalogist for 1890. By C. Hart Merriam. (From the Report of the Secretary of Agriculture for 1890.) Pp. III, 277-285. May, 1891.

Report of the Ornithologist and Mammalogist for 1891. By C. Hart Merriam. (From the Report of the Secretary of Agriculture for 1891.) Pp. 267-271. June, 1892.

Report of the Ornithologist and Mammalogist for 1892. By C. Hart Merriam. (From the Report of the Secretary of Agriculture for 1892.) Pp. 181-200, pls. 5. August, 1893.

DIVISION OF POMOLOGY.

- Pomological Bulletin No. 1.** Report on the Condition of Tropical and Semi-tropical Fruits in the United States in 1887. By P. W. Reasoner and W. G. Klee. Pp. 149, pls. 3. 1888. (Reprinted without plates June, 1891.)
- Pomological Bulletin No. 2.** Report on the Adaptation of Russian and Other Fruits to the Extreme Northern Portions of the United States. By T. T. Lyon. Pp. 64. 1888.
- Pomological Bulletin No. 3.** Classification and Generic Synopsis of the Wild Grapes of North America. By T. V. Munson. Pp. 14. October, 1890.
- Pomological Bulletin No. 4.** Report on the Relative Merit of Various Stocks for the Orange, with notes on Mal di Goma and the Mutual Influence of Stock and Scion. By William R. King. Pp. 21. May, 1891.
- Pomological Circular No. 1.** Letter of inquiry to fruit-growers. Pp. 1, letter size. December, 1887.
- Pomological Circular No. 2.** Directions for selecting, preparing, and sending specimens of fruits. Pp. 1, letter size. 1888.
- Pomological Circular No. 3.** Circular of inquiry relative to apple culture. Pp. 4, letter size. February, 1890.
- Pomological Circular No. 4.** Circular of inquiry relative to small-fruit culture. Pp. 23. April, 1890.
- Pomological Circular No. 5.** Circular of inquiry relative to nut culture. Pp. 7, letter size. June, 1890.
- Pomological Circular No. 6.** Circular to orange-growers, making inquiries regarding the relative merits of sour and sweet stock. Pp. 4, letter size. July, 1890.
- Pomological Circular No. 7.** Circular of inquiry relative to peach culture. Pp. 4; size, 8 by 13 inches. March, 1891.
- Pomological Circular No. 8.** Circular of inquiry relative to grape culture. Pp. 4; size, 8 by 13 inches. March, 1892.
- Report of the Pomologist for 1889.** By H. E. Van Deman. (From the Report of the Secretary of Agriculture for 1889.) Pp. 433-452, pls. 10. August, 1890.
- Report of the Pomologist for 1890.** By H. E. Van Deman. (From the Report of the Secretary of Agriculture for 1890.) Pp. 409-424, pls. 9. May, 1891.
- Report of the Pomologist for 1891.** By H. E. Van Deman. (From the Report of the Secretary of Agriculture for 1891.) Pp. 379-404, pls. 9. June, 1892.
- Report of the Pomologist for 1892.** By H. E. Van Deman. (From the Report of the Secretary of Agriculture for 1892.) Pp. 247-280, pls. 13. June, 1893.

RAINFALL INVESTIGATION.

- Report of the Special Agent of the Department of Agriculture for Making Experiments in the Production of Rainfall.** By R. G. Dyrenforth. (Senate Executive Document No. 45, Fifty-second Congress, first session.) Pp. 59, pls. 9. May, 1892.

DIVISION OF RECORDS AND EDITING.

- Report of the Chief of the Division of Records and Editing for 1890. By Geo. Wm. Hill. (From the Report of the Secretary of Agriculture for 1890.) Pp. 437-447. May, 1891.
- Report of the Chief of the Division of Records and Editing for 1891. By Geo. Wm. Hill. (From the Report of the Secretary of Agriculture for 1891.) Pp. 489-498. June, 1892.
- Report of the Chief of the Division of Records and Editing for 1892. By Geo. Wm. Hill. (From the Report of the Secretary of Agriculture for 1892.) Pp. 497-508. June, 1893.

SILK SECTION.

(Discontinued June 30, 1891.)

- Bulletin No. 1, Silk Section. How to Raise Silk-Worms: A brief Manual of Instructions, abridged from Bulletin No. 9 of the Division of Entomology. By Philip Walker. Pp. 16, figs. 10. February, 1890.
- Report of the Chief of the Silk Section for 1889. By Philip Walker. (From the Report of the Secretary of Agriculture for 1889.) Pp. 453-476. August, 1890.
- Report of the Chief of the Silk Section for 1890. By Philip Walker. (From the Report of the Secretary of Agriculture for 1890. Pp. 265-276. May, 1891.

DIVISION OF STATISTICS.

- Report No. 1, Miscellaneous Series. A Report on Flax, Hemp, Ramie, and Jute, with Considerations upon Flax and Hemp Culture in Europe, a Report on the Ramie Machine Trials of 1889 in Paris, and Present Status of Fiber Industries in the United States. By Charles Richards Dodge. Pp. 104, figs. 7. April, 1890.
- Report No. 2, Miscellaneous Series. Report on the Agriculture of South America, with Maps and Latest Statistics of Trade. By Almont Barnes. Pp. 189, pls. 3. May, 1892.
- Report No. 3, Miscellaneous Series. Coöperative Credit Associations in Certain European Countries, and their Relation to Agricultural Interests. By Edward T. Peters. Pp. 117. May, 1892.
- Report No. 4, Miscellaneous Series. Wages of Farm Labor in the United States. Results of Nine Statistical Investigations, from 1866 to 1892, with Extensive Inquiries concerning Wages from 1840 to 1865. By J. R. Dodge. Pp. 69. May, 1892.
- Report No. 5, Miscellaneous Series. Production and Distribution of the Principal Agricultural Products of the World. Compiled from Official Statistics. By J. R. Dodge. Pp. 205. March, 1893.
- Report No. 6, Miscellaneous Series. Rice: Its Cultivation, Production, and Distribution in the United States and Foreign Countries. By Amory Austin. With a chapter on the Rice Soils of South Carolina, by Milton Whitney. Pp. 89. April, 1893.
- Report No. 7, Miscellaneous Series. An Agricultural Survey of Wyoming. By John W. Hoyt. Pp. 72, map 1. May, 1893.
- Statistical Report No. 58.* Report on the Crops of the Year, and on Freight Rates of Transportation Companies. December, 1888. (With articles on Farm Prices, Australasian Statistics, and the Rhine Vintage.) Pp. 553-592. [January, 1889.]

* Statistical Reports Nos. 58 to 102, inclusive, were compiled under the supervision of J. R. Dodge, Statistician of the U. S. Department of Agriculture, who also contributed many of the articles they include.

Statistical Report No. 59. Report upon the Numbers and Values of Farm Animals, and on Freight Rates of Transportation Companies. January and February, 1889. (With cotton returns for February, and an article on the Canning Industry in the United States.) Pp. 48. [February, 1889.]

Statistical Report No. 60. Report on Distribution and Consumption of Corn and Wheat, and on Freight Rates of Transportation Companies. March, 1889. (With articles on methods of determining weight per bushel, Wheat Inspection, and the Wheat Crop of the World in 1888.) Pp. 49-88.

Statistical Report No. 61. Report of the Condition of Winter Grain, the Condition of Farm Animals, and on Freight Rates of Transportation Companies. April, 1889. (With an account of the Italian Interdiction of American Pork.) Pp. 89-136.

Statistical Report No. 62. Report of the Condition of Winter Grain, and the Progress of Cotton Planting; also on the Freight Rates of Transportation Companies. May, 1889. (With an article on Foreign Trade and the American Surplus.) Pp. 137-188.

Statistical Report No. 63. Report on the Acreage of Wheat and Cotton, and Condition of Cereal Crops, and on Freight Rates of Transportation Companies. June, 1889. (With articles on Methods in Crop Reporting, and Bee-keeping.) Pp. 189-236.

Statistical Report No. 64. Report on the Area of Corn, Potatoes, and Tobacco, and Condition of Growing Crops, and on Freight Rates of Transportation Companies. July, 1889. (With articles on Agriculture in Southern Texas, and Egyptian Crops in 1888.) Pp. 237-276.

Statistical Report No. 65. Report on the Condition of Growing Crops, and on Freight Rates of Transportation Companies. August, 1889. (With an article on the Indian Wheat Crop of 1889, and the first consular reports transmitted by the Department of State under the law of 1888.) Pp. 277-332.

Statistical Report No. 66. Report on Condition of Crops in America and Europe, and on Freight Rates of Transportation Companies. September, 1889. (With an article on the Arid Lands.) Pp. 333-392.

Statistical Report No. 67. Report on Condition of Crops, Yield of Grain per Acre, and on Freight Rates of Transportation Companies. October, 1889. Pp. 393-435.

Statistical Report, No. 68. Report on Yield of Crops per Acre, and on Freight Rates of Transportation Companies. November, 1889. (With articles on Publicity of Crop Results, and the Standard of Condition in Crop Reports.) Pp. 437-484.

Statistical Report No. 69. Report on the Crops of the Year, and on Freight Rates of Transportation Companies. December, 1889. (With articles on Farm Prices, Resources and Productions of South Florida, Prices of Public Lands in Mexico, the Agricultural Syndicates of France, and Crops of Sweden, 1889.) Pp. 485-548. [January, 1890.]

Statistical Report No. 70. Report upon the Numbers and Values of Farm Animals, and Freight Rates of Transportation Companies. January and February, 1890. (With cotton returns for February, and articles on Our Foreign Trade in Dairy Products Threatened, Meat Consumption in Berlin, Diseases of Animals in Germany in 1887, and Railroad Construction in 1889.) Pp. 64. [February, 1890.]

Statistical Report No. 71. Report on Distribution and Consumption of Corn and Wheat, and on Freight Rates of Transportation Companies. March, 1890. (With articles on Agricultural Depression and its Causes, and the World's Wheat Crop for 1889.) Pp. 65-116.

Statistical Report No. 72. Report of the Condition of Winter Grain, the Condition of Farm Animals, and on Freight Rates of Transportation Companies. April, 1890. (With article on Official Reports on Foreign Crops, and notes on the Cotton Crop of the Punjab for 1889.) Pp. 117-174.

- ✓ Statistical Report No. 73. Report of the Condition of Winter Grain, the Progress of Cotton Planting, and Wages of Farm Labor; also on the Freight Rates of Transportation Companies. May, 1890. (With articles on Sugar Production in Europe, and Foreign Distribution of Wheat and Corn Surplus.) Pp. 175-230.
- ✓ Statistical Report No. 74. Report on the Acreage of Wheat and Cotton, and Condition of Cereal Crops, and on Freight Rates of Transportation Companies. June, 1890. (With articles on Cotton Production and Trade of the World, Domestic and Foreign Wools, Course of Agricultural Prices, and Farmers' Milling Companies.) Pp. 231-310.
- Statistical Report No. 75. Report on the Area of Corn, Potatoes, and Tobacco, and Condition of Growing Crops, and on Freight Rates of Transportation Companies. July, 1890. (With an article on Statistics of Mexico.) Pp. 311-374.
- Statistical Report No. 76. Report on the Condition of Growing Crops, and on Freight Rates of Transportation Companies. August, 1890. (With articles on Statistics of Canada, Argentine Statistics, and Indian Wheat Crop of 1890.) Pp. 375-430.
- 7 Statistical Report No. 77. Report on Condition of Crops in America and Europe, and on Freight Rates of Transportation Companies. September, 1890. (With articles on Pan-American Trade, Tariffs of South America, and a Statistical View of Venezuela.) Pp. 431-494.
- Statistical Report No. 78. Report on Condition of Crops, Yield of Grain per Acre, and on Freight Rates of Transportation Companies. October, 1890. (With articles on the Crop Year in California and Colorado, and Prices of Wheat in 1890.) Pp. 495-542.
- 79 Statistical Report No. 79. Report on Yield of Crops per Acre, and on Freight Rates of Transportation Companies. November, 1890. (With articles on a Decade of Wheat Exports, Statistics of Colombia, Small Holdings and Allotments in Great Britain, and the French Agricultural Syndicates.) Pp. 543-590.
- 80 Statistical Report No. 80. Report on the Crops of the Year and on Freight Rates of Transportation Companies. December, 1890. (With articles on Farm Prices, New York Dairymen's Association Meeting, Foreign Markets for Dairy Products, Financial Condition of California Farmers, and Peanut Production.) Pp. 591-652. [January, 1891.]
- Statistical Report No. 81. Report upon the Numbers and Values of Farm Animals, and on Freight Rates of Transportation Companies. January and February, 1891. (With cotton returns for February, and articles on Sheep Husbandry in Arizona, the Canning Industry in 1890, the Angora Goat in California, and New Railroad Construction, 1890.) Pp. 56. [February, 1891.]
- Statistical Report No. 82. Report on Distribution and Consumption of Corn and Wheat, and on Freight Rates of Transportation Companies. March, 1891. (With articles on Agricultural Contributions to International Commerce, Comparative Statistics of Wheat Exportation, and Legal Weights per Bushel.) Pp. 57-104.
- 83 Statistical Report No. 83. Report of the Condition of Winter Grain, the Condition of Farm Animals, and on Freight Rates of Transportation Companies. April, 1891. (With articles on the Permanency of Agricultural Production and Rural Coöperative Banks in Russia.) Pp. 105-158.
- 84 Statistical Report No. 84. Report of the Condition of Winter Grain, the Progress of Cotton Planting; also on the Freight Rates of Transportation Companies. May, 1891. (With articles on Better Times for Farmers, Recent Facts Regarding Ramie, and Agriculture in Brazil.) Pp. 159-238.
- Statistical Report No. 85. Report on the Acreage of Wheat and Cotton, and Condition of Cereal Crops, and on Freight Rates of Transportation Companies. June, 1891. (With articles on Official Statistics of Foreign Crops, and Agriculture of Chili.) Pp. 239-302.

Statistical Report No. 86. Report on the Area of Corn, Potatoes, and Tobacco, and Condition of Growing Crops, and on Freight Rates of Transportation Companies. July, 1891. (With articles on European Rye Production, the Coöperative Credit Unions of Germany, and Agriculture in Peru.) Pp. 303-374.

Statistical Report No. 87. Report on the Condition of Growing Crops, and on Freight Rates of Transportation Companies. August, 1891. (With articles on the Indian Wheat Crop of 1891, and the Raiffeisen Loan Associations of Germany.) Pp. 375-437.

Statistical Report No. 88. Report on Condition of Crops in America and Europe, and on Freight Rates of Transportation Companies. September, 1891. (With articles on Official Returns of Russian Cereals, the Rye Situation, the Low Price of Cotton, Prices Seventy Years Ago, Agriculture in Ecuador, and the People's Banks of Austria Hungary.) Pp. 439-518. 88

Statistical Report No. 89. Report on Condition of Crops, Yield of Grain per Acre, and on Freight Rates of Transportation Companies. October, 1891. (With articles on the Wine Industry of Napa County, Cal., Foreign Tariffs on Agricultural Products, Agriculture in Bolivia, and Agriculture in Japan.) Pp. 519-590.

Statistical Report No. 90. Report on Yield of Crops per Acre, and on Freight Rates of Transportation Companies. November, 1891. (With an article on Agriculture in Paraguay.) Pp. 591-634.

Statistical Report No. 91. Report on the Crops of the Year, and on Freight Rates of Transportation Companies. December, 1891. (With articles on Farm Prices, Distribution of Spring and Winter Wheat, Cotton Imports of the United States, the Canning Industry, Agriculture in Uruguay, and Agriculture in the Guianas.) Pp. 635-698. [January, 1892.]

Statistical Report No. 92. Report upon the Numbers and Values of Farm Animals, and on Freight Rates of Transportation Companies. January and February, 1892. (With cotton returns for February, and an article on New Railway Construction, 1891.) Pp. 44. [February, 1892.]

Statistical Report No. 93. Report on Distribution and Consumption of Corn and Wheat, and on Freight Rates of Transportation Companies. March, 1892. (With articles on Indications *vs.* Estimates, More Overproduction, and Official Statistics of Foreign Countries.) Pp. 45-92.

Statistical Report No. 94. Report of the Condition of Winter Grain, the Condition of Farm Animals, and on Freight Rates of Transportation Companies. April, 1892. (With articles on Speculation *vs.* Industry, and the Cotton Acreage.) Pp. 93-147.

Statistical Report No. 95. Report of the Condition of Winter Grain and the Progress of Cotton Planting; also on the Freight Rates of Transportation Companies. May, 1892. (With articles on a Wool Retrospect, and French Tariff and Reciprocity Treaties.) Pp. 149-196.

Statistical Report No. 96. Report on the Acreage of Wheat and Cotton, and Condition of Cereal Crops, and on Freight Rates of Transportation Companies. June, 1892. Pp. 197-244.

Statistical Report No. 97. Report on the Area of Corn, Potatoes, and Tobacco, and Condition of Growing Crops. July, 1892. Pp. 245-272.

Special Report of the Statistician, July, 1892. Contents: European Crop Prospects for July; Notes on Foreign Agriculture; Indian Cotton Crop of 1892; Suspension of Duties on Corn Imported into Mexico; Removal of Restrictions upon Russian Grain Exports; Exports of Corn; Transportation Rates. Pp. 273-296.

Statistical Report No. 98. Report of the Statistician, August, 1892. Contents: Primary Prices of Farm Products; Foreign Trade in Agricultural Products, 1892; European Crop Prospects for August; Consular Notes on Foreign Agriculture; Transportation Rates. Pp. 297-327.

Report on the Condition of Growing Crops. August, 1892. Pp. 16.

Statistical Report No. 99. Report of the Statistician, September and October, 1892. Contents: Farm Prices in Two Centuries; the Ramie Machine Trials at New Orleans; Indian Wheat Crop of 1892; Notes of Domestic and Foreign Trade and Industry; European Crop Report for September, and Transportation Rates. Pp. 329-376.

Report on the Condition of Crops. September, 1892. Pp. 20.

Report on the Condition of Crops and Yield of Grain per Acre. October, 1892. Pp. 23.

Statistical Report No. 100. Report of the Statistician, November and December, 1892. Contents: Agricultural Production and Distribution of the World; Tests of Averages of Condition; Annual Meeting of Patrons of Husbandry; Reciprocity and Agricultural Exports; European Crop Report for December; and Transportation Rates. Pp. 377-416.

Report on Yield of Crops per Acre and on Product Compared with Last Year. November, 1892. Pp. 16.

Report on the Crops of the Year. December, 1892. (With article on Farm Prices.) Pp. 28. [January, 1893.]

Statistical Report No. 101. Report of the Statistician, January and February, 1893. Contents: Agriculture in France; Report on Hungarian Milling; The Canning Industry; Tobacco Experiments in Texas; European Crop Report for February; Farm Animals of the World; Transportation Rates. Pp. 71. [February, 1893.]

Report upon the Numbers and Values of Farm Animals, and on Cotton Distribution. January-February, 1893. Pp. 20. [February, 1893.]

Statistical Report No. 102. Report of the Statistician, March, 1893. Contents: Agriculture in Alaska; Foreign Official Crop Estimates; European Crop Report; Wheat Crop of the World; Transportation Rates. Pp. 73-95.

Report on Distribution and Consumption of Corn and Wheat. March, 1893. Pp. 16.

Statistical Report No. 103.* Report of the Statistician, April, 1893. Contents: Condition of Winter Grain; Notes concerning wheat, from reports of State agents and county correspondents; Condition of Farm Animals; European Crop Report; Transportation Rates. Pp. 97-140.

Statistical Report No. 104. Report of the Statistician, May, 1893. Contents: Condition of Winter Grain; Mowing Lands and Pastures; Progress of Cotton Planting; Spring Plowing; Changes in Crop Areas; Temperature and Rainfall; Notes from Reports of State Agents; The Cotton Crop of India for the Year 1892-'93; European Crop Report for May, 1893; Transportation Rates. Pp. 141-178.

Statistical Report No. 105. Report of the Statistician, June, 1893. Contents: Crop Report for June; Agriculture in the Caucasus; The Customs Tariff in Martinique; Agricultural Produce Statistics of the United Kingdom; Transportation Rates. Pp. 179-221.

Statistical Report No. 106. Report of the Statistician, July, 1893. Contents: Crop Report for July; Statistics of Ontario; Foreign Import Duties on Wheat; Notes on Foreign Agriculture; Use of Maize of the United States in Mexico; Transportation Rates. Pp. 223-270.

Statistical Report No. 107. Report of the Statistician, August, 1893. Contents: Crop Report for August; Notes on Foreign Agriculture; Wheat Crop of India for 1893; Production of Corn in New South Wales; Domestic and Transatlantic Freight Rates. Pp. 271-322.

* Statistical Reports Nos. 103 to 110, inclusive, were compiled under the direction of Henry A. Robinson, Statistician of the U. S. Department of Agriculture.

Statistical Report No. 108. Report of the Statistician, September, 1893. Contents: September Crop Report; Agricultural Returns of Great Britain; Ontario Crop Report; Crops in Germany; Notes from United States Consular Officers in Scotland, France, Germany, Belgium, Cochin China, and Ontario; Domestic and Transatlantic Freight Rates. Pp. 323-369.

Statistical Report No. 109. Report of the Statistician, October, 1893. Contents: October Crop Report; Notes from Reports of State Agents; Imports of Hay into the United Kingdom; Cereal Crops of France and Italy for 1893; Citrus Fruit Crop in Italy for 1892-'93; Production, Commerce, and Consumption of Wine in Italy; Corn as Feed for Horses in Germany; Reports from Consular Officers relating to crops in Germany, Scotland, New Brunswick, and Ontario; Domestic and Transatlantic Freight Rates. Pp. 371-414.

Statistical Report No. 110. Report of the Statistician, November, 1893. Contents: November Crop Report; Notes from Reports of State Agents; Imports of American Wheat Flour into Europe; the Hop Crop of England for 1893; the Beet-Sugar Production of Europe for the Year 1893-'94; Agriculture in Great Britain and Ireland; Notes from United States Consular Officers regarding crops in Ontario, Spain, Cochin China, Korea, Scotland, and Egypt; Domestic and Transatlantic Freight Rates. Pp. 415-458.

The Arid Lands. (Reprinted from Statistical Report No. 66.) Pp. 7. September, 1889.

Album of Agricultural Statistics of the United States. Results of Investigation under direction of the Statistician. By J. R. Dodge. Pp. 8, colored charts 16. (Relates to farm areas, acreage and yield of corn, wheat, and oats, average value of farm animals and of lands, rural population, and farm tenures.) Size, 9½ by 12½ inches. August, 1889.

Album of Agricultural Graphics. Values per Acre of Crops of the United States, based on Results of Official Statistical Investigation. By J. R. Dodge. (Ten colored maps illustrating, by States, the values and yields per acre of corn, wheat, oats, rye, barley, buckwheat, potatoes, tobacco, cotton, and hay, with brief introductory text.) Size, 12½ by 18½ inches. March, 1891.

Monthly Crop Synopsis. (A four-page summary of the condition, prospects, yield, price, distribution, and consumption of crops and the number and value of farm animals. Issued soon after the 10th of each month for prompt and wide circulation in advance of the more extended monthly crop report from which it is condensed.)

1890.

March Synopsis. (From Statistical Report No. 71.)

April Synopsis. (From Statistical Report No. 72.)

May Synopsis. (From Statistical Report No. 73.)

June Synopsis. (From Statistical Report No. 74.)

July Synopsis. (From Statistical Report No. 75.)

August Synopsis. (From Statistical Report No. 76.)

September Synopsis. (From Statistical Report No. 77.)

October Synopsis. (From Statistical Report No. 78.)

November Synopsis. (From Statistical Report No. 79.)

December Synopsis. (From Statistical Report No. 80.)

1891.

February Synopsis. (From Statistical Report No. 81.)

March Synopsis. (From Statistical Report No. 82.)

April Synopsis. (From Statistical Report No. 83.)

May Synopsis. (From Statistical Report No. 84.)

June Synopsis. (From Statistical Report No. 85.)

July Synopsis. (From Statistical Report No. 86.)

Monthly Crop Synopsis—Continued.

August Synopsis. (From Statistical Report No. 87.)
 September Synopsis. (From Statistical Report No. 88.)
 October Synopsis. (From Statistical Report No. 89.)
 November Synopsis. (From Statistical Report No. 90.)
 December Synopsis. (From Statistical Report No. 91.)

1892.

February Synopsis. (From Statistical Report No. 92.)
 March Synopsis. (From Statistical Report No. 93.)
 April Synopsis. (From Statistical Report No. 94.)
 May Synopsis. (From Statistical Report No. 95.)
 June Synopsis. (From Statistical Report No. 96.)
 July Synopsis. (From Statistical Report No. 97.)
 August Synopsis. (From August Crop Report.)
 September Synopsis. (From September Crop Report.)
 October Synopsis. (From October Crop Report.)
 November Synopsis. (From November Crop Report.)

1893.

January Synopsis. (From December Crop Report.)
 February Synopsis. (From Statistical Report No. 101.)
 March Synopsis. (From Statistical Report No. 102.)
 April Synopsis. (From Statistical Report No. 103.)
 May Synopsis. (From Statistical Report No. 104.)
 June Synopsis. (From Statistical Report No. 105.)
 July Synopsis. (From Statistical Report No. 106.)
 August Synopsis. (From Statistical Report No. 107.)
 September Synopsis. (From Statistical Report No. 108.)
 October Synopsis. (From Statistical Report No. 109.)
 November Synopsis. (From Statistical Report No. 110.)
 December Synopsis. (From Statistical Report No. 111.)

Report of the Statistician for 1889. By J. R. Dodge. (From Report of the Secretary of Agriculture for 1889.) Pp. 201-272. August, 1890.

Report of the Statistician for 1890. By J. R. Dodge. (From the Report of the Secretary of Agriculture for 1890.) Pp. 287-360; statistical maps, 3. May, 1891.

Report of the Statistician for 1891. By J. R. Dodge. (From the Report of the Secretary of Agriculture for 1891.) Pp. 273-340. June, 1892.

Report of the Statistician for 1892. By J. R. Dodge. (From the Report of the Secretary of Agriculture for 1892.) Pp. 403-470. June, 1893.

DIVISION OF VEGETABLE PATHOLOGY.

(For publications of this Division under its former organization, *see* Division of Botany, p. 12.)

Bulletin No. 1 of the Division of Vegetable Pathology. Additional Evidence on the Communicability of Peach Yellows and Peach Rosette. By Erwin F. Smith, Special Agent. Pp. 65, pls. 38. December, 1891.

Bulletin No. 2 of the Division of Vegetable Pathology. The California Vine Disease. A Preliminary Report of Investigations by Newton B. Pierce, Special Agent. Pp. 222, pls. 25, charts 2. November, 1892.

Bulletin No. 3 of the Division of Vegetable Pathology. Report on the Experiments made in 1891 in the Treatment of Plant Diseases. By B. T. Galloway. Pp. 76, pls. 8. November, 1892.

Bulletin No. 4 of the Division of Vegetable Pathology. Experiments with Fertilizers for the Prevention and Cure of Peach Yellows, 1889-'92. By Erwin F. Smith. Pp. 197, pls. 33. July, 1893.

- Farmers' Bulletin No. 4.** Fungous Diseases of the Grape and their Treatment. By B. T. Galloway. Pp. 12. March, 1891.
- Farmers' Bulletin No. 5.** Treatment of Smuts of Oats and Wheat. By W. T. Swingle. Pp. 8, pl. 1. February, 1892.
- Farmers' Bulletin No. 7.** Spraying Fruits for Insect Pests and Fungous Diseases with a Special Consideration of the Subject in its Relation to the Public Health. Pp. 20. April, 1892.
- Journal of Mycology.** (Devoted to the study of fungi, especially in their relation to plant diseases. With illustrations.)
(Vols. I-IV, inclusive, were not published by the Department of Agriculture.)
Vol. V, No. 1. Pp. 50, pls. 8. April, 1889.
Vol. V, No. 2. Pp. III, 51-111, pls. 9, 10, figs. 3. July, 1889.
Vol. V, No. 3. Pp. 113-180, pls. 11, 12. November, 1889.
Vol. V, No. 4. Pp. III, 181-249, v, pls. 13, 14. November, 1889.
Vol. VI, No. 1. Pp. III, 44, pls. 2. May, 1890.
Vol. VI, No. 2. Pp. III, 45-88, pls. 3, figs. 10. September, 1890.
Vol. VI, No. 3. Pp. III, 89-136, pls. 4-6, figs. 4. January, 1891.
Vol. VI, No. 4. Pp. III, 137-207, IV, pls. 7-18 (with index to Vol. VI). May, 1891.
Vol. VII, No. 1. Pp. III, 64, pls. 10, figs. 3. September, 1891.
Vol. VII, No. 2. Pp. III, 65-194, pls. 11-17. April, 1892.
Vol. VII, No. 3. Pp. v, 195-331, pls. 18-31, figs. 3, diagrams 2, chart 1. June, 1893.
- An Experiment in Preventing the Injuries of Potato Rot.** By Clarence M. Weed. (Reprinted from Journal of Mycology, Vol. V, No. 3.) Pp. 158-160. November, 1889.
- Peach Rot and Peach Blight.** By Erwin F. Smith. (Reprinted from Journal of Mycology, Vol. V, No. 3.) Pp. 123-134. November, 1889.
- Treatment of Plant Diseases.** (A series of articles reprinted from Journal of Mycology, Vol. VI, No. 1.) Pp. 23. May, 1890.
- A New Hollyhock Disease.** By Miss E. A. Southworth. (Reprinted from Journal of Mycology, Vol. VI, No. 2.) Pp. 45-50, pl. 3. November, 1890.
- A Disease of Almond Trees, and Suggestions in Regard to the Treatment of Cercospora Circumscissa.** By Newton B. Pierce. (Reprinted from the Journal of Mycology, Vol. VII, No. 2.) Pp. 66-78, pls. 11-14. April, 1892.
- Experiments in Preventing Leaf Diseases of Nursery Stock in Western New York.** By D. G. Fairchild. (From the Journal of Mycology, Vol. VII, No. 3.) Pp. 240-264, pls. 21-29, diagrams 2. July, 1893.
- Circular No. 6 of the Division of Vegetable Pathology.** Treatment of Black Rot of the Grape. Pp. 3. March, 1889.
- Circular No. 7 of the Division of Vegetable Pathology.** Grape Vine Diseases. Pp. 4. July, 1889.
- Circular No. 8 of the Division of Vegetable Pathology.** Experiments in the Treatment of Pear Leaf-blight and the Apple Powdery Mildew. Pp. 11. October, 1889.
- Circular No. 9 of the Division of Vegetable Pathology.** Root-rot of Cotton. (Circular of inquiry.) Pp. 4. November, 1889.
- Circular No. 10 of the Division of Vegetable Pathology.** Treatment of Nursery Stock for Leaf-blight and Powdery Mildew. Pp. 8, figs. 3. April, 1891.
- Circular No. 11 of the Division of Vegetable Pathology.** Letter of Inquiry regarding Losses from Grape Diseases and the Extent to which Fungicides are Employed. Half sheet, 8½ by 14 inches. December, 1891.

Circular No. 12 of the Division of Vegetable Pathology. Letter of Inquiry relative to the Rust of Wheat, Oats, Rye, and Barley. Half sheet, 8 $\frac{1}{2}$ by 14 inches. December, 1891.

Circular No. 13 of the Division of Vegetable Pathology. Circular of Inquiry relative to "Leaf Curl" of Peach Trees. Pp. 3, letter size. December, 1893.

Report of the Chief of the Section of Vegetable Pathology for 1888. By B. T. Gal-
loway. (From the Report of the Commissioner of Agriculture for 1888.) Pp. iv,
325-404, iii, pls. 19, 1 map. June, 1889.

Report of the Chief of the Section of Vegetable Pathology for 1889. By B. T. Gal-
loway. (From the Report of the Secretary of Agriculture for 1889.) Pp. 397-432,
pls. 2, fig. 1. August, 1890.

Report of the Chief of the Division of Vegetable Pathology for 1890. By B. T. Gal-
loway. (From the Report of the Secretary of Agriculture for 1890.) Pp. 393-408,
pls. 5. May, 1891.

Report of the Chief of the Division of Vegetable Pathology for 1891. By B. T. Gal-
loway. (From the Report of the Secretary of Agriculture for 1891.) Pp. 359-378,
pls. 3. June, 1892.

Report of the Chief of the Division of Vegetable Pathology for 1892. By B. T. Gal-
loway. (From the Report of the Secretary of Agriculture for 1892.) Pp. 215-246,
pls. 4. July, 1893.

WEATHER BUREAU.

Weather Bureau Bulletin No. 1. Notes on the Climate and Meteorology of Death
Valley, California. By Mark W. Harrington, Chief of the Weather Bureau. Pp.
50, figs. 10. June, 1892.

Weather Bureau Bulletin No. 2. Notes on a New Method for the Discussion of Mag-
netic Observations. By Frank H. Bigelow. Pp. 40, pl. 1. July, 1892.

Weather Bureau Bulletin No. 3. A Report on the Relations of Soil to Climate. By
E. W. Hilgard. Pp. 59. August, 1892.

Weather Bureau Bulletin No. 4. Some Physical Properties of Soils in Their Relation
to Moisture and Crop Distribution. By Milton Whitney. Pp. 90. August, 1892.

Weather Bureau Bulletin No. 5. Observations and Experiments on the Fluctuations
in the Level and Rate of Movement of Ground-water on the Wisconsin Agricultural
Experiment Station Farm and at Whitewater, Wisconsin. By Franklin H. King.
Pp. 75, pls. 6, figs. 37. December, 1892.

Weather Bureau Bulletin No. 6. The Diurnal Variation of Barometric Pressure. By
Frank N. Cole. Pp. 32. December, 1892.

Weather Bureau Bulletin No. 7. Report of the First Annual Meeting of the Ameri-
can Association of State Weather Services Coöperating with the Weather Bureau,
U. S. Department of Agriculture. Pp. 49, figs. 6. February, 1893.

Weather Bureau Bulletin No. 8. Report on the Climatology of the Cotton Plant.
By P. H. Mell. Pp. 68, charts 7. April, 1893.

Weather Bureau Bulletin No. 9. Report on the Forecasting of Thunderstorms dur-
ing the Summer of 1892. By N. B. Conger. Pp. 54, charts 6. July, 1893.

Weather Bureau Bulletin No. 10. The Climate of Chicago. By Henry A. Hazen.
Pp. 137, figs. 26. August, 1893.

Bulletin A of the Weather Bureau. Summary of International Meteorological
Observations. By H. H. C. Danwoody. Size, 19 by 24 inches. Pp. 10, charts 61.
August, 1893.

Monthly Weather Review. (A summary by months of weather conditions throughout the United States, based upon reports of nearly three thousand regular and voluntary observers. Size, quarto):

- Vol. XIX, No. 7, July, 1891. Pp. 156-180, charts 5.
- Vol. XIX, No. 8, August, 1891. Pp. 181-208, charts 5.
- Vol. XIX, No. 9, September, 1891. Pp. 209-232, ix, charts 5.
- Vol. XIX, No. 10, October, 1891. Pp. 233-258, charts 6.
- Vol. XIX, No. 11, November, 1891. Pp. 259-288, charts 8.
- Vol. XIX, No. 12, December, 1891. Pp. 289-318, charts 6.
- Vol. XIX, Supplement to No. 12. Pp. 319-330, charts 7.
- Vol. XX, No. 1, January, 1892. Pp. 32, charts 7.
- Vol. XX, No. 2, February, 1892. Pp. 33-60, charts 7.
- Vol. XX, No. 3, March, 1892. Pp. 61-88, charts 7.
- Vol. XX, No. 4, April, 1892. Pp. 89-116, charts 5.
- Vol. XX, No. 5, May, 1892. Pp. 117-148, charts 5.
- Vol. XX, No. 6, June, 1892. Pp. 149-178, charts 4.
- Vol. XX, No. 7, July, 1892. Pp. 179-206, charts 4.
- Vol. XX, No. 8, August, 1892. Pp. 207-234, charts 4.
- Vol. XX, No. 9, September, 1892. Pp. 235-260, charts 4.
- Vol. XX, No. 10, October, 1892. Pp. 261-288, charts 5.
- Vol. XX, No. 11, November, 1892. Pp. 289-318, charts 6.
- Vol. XX, No. 12, December, 1892. Pp. 319-346, charts 7.
- Vol. XX, Supplement to No. 12. (Annual Summary for 1892.) Pp. 347-362, charts 7.
- Vol. XXI, No. 1, January, 1893. Pp. 30, charts 9.
- Vol. XXI, No. 2, February, 1893. Pp. 31-60, charts 8.
- Vol. XXI, No. 3, March, 1893. Pp. 61-90, charts 6.
- Vol. XXI, No. 4, April, 1893. Pp. 91-122, charts 6.
- Vol. XXI, No. 5, May, 1893. Pp. 123-152, charts 6.
- Vol. XXI, No. 6, June, 1893. Pp. 153-178, charts 5.
- Vol. XXI, No. 7, July, 1893. Pp. 179-204, charts 5.
- Vol. XXI, No. 8, August, 1893. Pp. 205-240, charts 5.
- Vol. XXI, No. 9, September, 1893. Pp. 241-267, charts 6.
- Vol. XXI, No. 10, October, 1893. Pp. 268-308, charts 6.

Special Report of the Chief of the Weather Bureau. By Mark W. Harrington. (Summary of the operations of the Bureau during the three months immediately following its transfer to the Department of Agriculture, with an account of the objects and methods of its work.) Pp. 26. October, 1891.

Report of the Chief of the Weather Bureau for 1891. By Mark W. Harrington. (From the Report of the Secretary of Agriculture for 1891.) Pp. 539-631, pls. 4. June, 1892.

Report of the Chief of the Weather Bureau for 1892. By Mark W. Harrington. (From the Report of the Secretary of Agriculture for 1892.) Pp. iv, 551-626, ii, pls. 4. July, 1893.

Instructions for Voluntary Observers. By T. Russell. Pp. 100, figs. 21. March, 1892.

Instructions to Operators on the U. S. Seacoast Telegraph Lines. Pp. 24. 1892.

Instructions for Special River Observers. Pp. 50, figs. 8. August, 1892.

Instructions to Observers and Code for Enciphering Reports at Cotton Region and Sugar and Rice Stations of the Weather Bureau. Pp. 1-27 and 3-16, figs. 10. 1892.

Tables for Obtaining the Temperature of the Dew-point, Relative Humidity, and Vapor Pressure. Prepared for use in the Weather Bureau. (Reprinted from Instructions for Voluntary Observers.) Pp. 69-92. 1892.

Cipher Code for Wind Signal Orders, Amending the Instructions to Special Displaymen. Pp. 10. November, 1892.

Instructions to Special Displaymen of the Weather Bureau. Size 5 by 7½ inches. Pp. 13. February, 1892.

Certain Climatic Conditions of the Two Dakotas, illustrated with One Hundred and Sixty-three Tables, Charts, and Diagrams. By John P. Finley, U. S. A. Size 9½ by 11½ inches, with maps, charts, and appendixes. Pp. 206. June, 1893.

Appendixes reprinted from the Annual Report of the Chief Signal Officer for 1891:

No. 3. Part 1, Report of the Officer in charge of the Verification of Official Forecasts; Part 2, Weather Forecasting at the Signal Office, June 30, 1891. Pp. 51-60.

No. 4. Report of Forecasts of Cold Waves. Pp. 61-65.

No. 5. Report of Professor in Charge of the River and Flood Division. Pp. 67-260, map 1.

No. 6. Report of the Officer in Charge of the State Weather Services. Pp. 261-292.

No. 8. Annual Report of Data Division. Pp. 317-340.

No. 10. Report of Assistant Professor in Charge of the Instrument Division. Pp. 343-386, figs. 11.

No. 11. Report of Bibliographer and Librarian. Pp. 387-409.

No. 13. Annual Meteorological Summary for the Year ending December 31, 1890. Pp. 433-533.

No. 14. Temperature Data, 1890, from Signal Service and Voluntary Observers. Pp. 535-667.

No. 15. Precipitation Data, 1890, from Signal Service and Voluntary Observers. Pp. 669-735.

No. 16. Dates of the First and Last Killing Frosts for the Season 1890-'91. Pp. 737-745.

No. 17. International Pressure and Storm Charts. Pp. 747-777, charts 26.

Report of the Chief of the Weather bureau, 1891-'92. (Devoted chiefly to table recording climatological data for the years 1891 and 1892.) Quarto, pp. 528, pls. 4, figs. 23. December, 1893.

Parts I to VI, inclusive, of the Report of the Chief of the Weather Bureau, 1891-'92, printed separately. Quarto.

Part I. Contents: Introduction, List of Observing Stations, Description of Instruments, and Instrumental Corrections—Methods of Reduction. Pp. 48, figs. 22, December, 1893.

Part II. Contents: Hourly Averages of Atmospheric Pressure, Temperature, and Wind from the Records of Self-recording Instruments at Twenty-eight Stations. Pp. 49-139. December, 1893.

Part III. Contents: Monthly and Annual Meteorological Summaries for Weather Bureau Stations. Pp. 141-303. December, 1893.

Part IV. Contents: Monthly and Annual Mean Temperature and Annual Extremes of Temperature, together with the Dates of First and Last Killing Frost. Pp. 305-365. December, 1893.

Part V. Contents: Monthly and Annual Precipitation—All Stations. Pp. 367-433. December, 1893.

Part VI. Contents: Miscellaneous Meteorological Tables and Reports. Pp. 435-528, pls. 4, fig. 22. December, 1893.

Instructions for Obtaining and Transcribing Records from Recording Instruments. Circular A, Instrument Room. Pp. 12. 1892.

Directions for Use of Maximum and Minimum Thermometers. Circular B, Instrument Room. Pp. 10. May 1892.

Instructions for Use of the Rain Gauge. Circular C, Instrument Room. Pp. 8, figs. 3. 1892.

Anemometry. A circular of general information respecting the theory and operation of typical instruments for indicating, measuring, and automatically recording wind movement and direction, with detailed instructions for the erection and care of those instruments of the Weather Bureau pattern. Circular D, Instrument Room. By C. F. Marvin. Pp. 40, figs. 18. March, 1893.

Instructions for Using Marvin's Weighing Rain and Snow Gauge. Circular E, Instrument Room. Pp. 16, figs. 5. October, 1893.

Instructions for using Glass Electrical Sunshine Recorder. Pattern, 1893. Size, 6 by 9½ inches. Pp. 4, figs. 2. June, 1893.

Instructions to Special Rainfall Observers of the Weather Bureau. Pp. 22. November, 1893.

Daily River Stages at River-gauge Stations on the Principal Rivers of the United States for the years 1890, 1891, 1892. By Thomas Russell. Pp. LXVII, 439, charts 12. Size 8½ by 10 inches. May, 1893.

Description of River Gauges, Bench Marks, Danger Lines, Low Water and Flood Marks at United States Weather Bureau River Stations. By Thomas Russell. (From Daily River Stages at River-gauge Stations on the Principal Rivers of the United States for the years 1890, 1891, 1892.) Pp. LXVII, size, 8½ by 10 inches. May, 1893.

Rainfall Laws, Deduced from Twenty Years of Observation. By Dr. Gustavus Hinrichs. Pp. 94, figs. 16. December, 1893.

Weather Map. (Issued twice daily, showing weather conditions throughout the United States and furnishing forecasts of probable changes.)

Edition published at Washington, D. C. Size, 19 by 24 inches.

Editions published at various stations of the Weather Bureau outside of Washington, D. C. Size, 13½ by 22½ inches.

Weather Crop Bulletin. (A brief summary of the condition of weather and crops of the United States, showing by maps and tables the departures from normal temperature and rainfall for the period covered by the bulletin. Issued weekly from March to October, inclusive, a separate monthly edition being continued throughout the year, and all issues being numbered consecutively in the order of their appearance. Uniform with Weather Map in size and form.)

1891. Nos. 22 to 39, inclusive.

1892. Nos. 1 to 33, inclusive.

1893. Nos. 1 to 32, inclusive.

Daily Bulletin. (Issued at Weather Bureau stations outside of Washington, D. C., showing the weather conditions at selected stations of the Bureau, the data being telegraphed to the various observers, who enter the same and cause the bulletins to be displayed, as in the case of the weather maps.) Size, 1892, 6 by 14 inches; 1893, 8 by 10 inches and 10 by 16 inches.

Wreck Chart of the Great Lakes, showing the location of wrecks occasioned through foundering, gales of wind, fogs, and general stormy weather conditions from 1886 to 1891. Size, 24 by 33 inches.

Lake Storm Bulletin. (Issued whenever severe storms pass across the region of the Great Lakes during the season of navigation, and furnished for distribution to observers of all Weather Bureau Stations on the Lakes):

No. 1. Storm of October 4 to October 7, inclusive. Size, 19 by 20 inches. October 7, 1893.

No. 2. Storm of October 5 to October 14, inclusive. Size, 19 by 20 inches. October 17, 1893.

